INITIAL REGULATORY FLEXIBILITY ANALYSIS

REVISED DRAFT

Prepared for

NOAA Fisheries Southwest Region

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Prepared by

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When an agency proposes regulations, the Regulatory Flexibility Act (RFA) (5 U.S.C. § 601-612) requires the agency to prepare and make available for public comment an initial regulatory flexibility analysis (IRFA) that describes the impact of the proposed rule on small businesses, nonprofit enterprises, local governments, and other small entities. The IRFA is to aid the agency in considering all reasonable regulatory alternatives that would minimize the economic impact on affected small entities.

This analysis addresses regulations that designate critical habitat for 7 Pacific salmon and steelhead evolutionarily significant units (ESUs) listed as "threatened" or "endangered" under the provisions of the Endangered Species Act. Table 1 describes each ESU in terms of ESA status, listing date and geographical scope.

Table 1. Descriptions of the 7 Pacific Salmon and Steelhead ESUs

ESU	ESA Status/ Year Listed	Geographic Scope (State and County)
California Coastal chinook salmon	Threatened/ 1999	CALIFORNIA – Colusa, Glenn, Humboldt, Lake, Mendocino, Napa, Sonoma, Tehama, Trinity
Central Valley spring-run chinook salmon	Threatened/ 1999	CALIFORNIA – Alameda, Butte, Colusa, Contra Costa, Glenn, Mendocino, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Trinity, Yolo, Yuba
Central California Coast *O. mykiss*	Threatened/ 1997	CALIFORNIA – Alameda, Contra Costa, Lake, Marin, Mendocino, Napa, Sacramento, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus
California Central Valley *O. mykiss*	Threatened/ 1998	CALIFORNIA – Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Madera, Mariposa, Mendocino, Merced, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Trinity, Tuolumne, Yolo, Yuba
Northern California *O. mykiss*	Threatened/ 2000	CALIFORNIA – Colusa, Glenn, Humboldt, Lake, Mendocino, Sonoma, Tehama, Trinity
South-Central California Coast *O. mykiss*	Threatened/ 1997	CALIFORNIA – Fresno, Merced, Monterey, San Benito, San Luis Obispo, Santa Clara, Santa Cruz, Stanislaus
Southern California *O. mykiss*	Endangered/ 1997	CALIFORNIA – Kern, Los Angeles, Orange, Riverside, San Diego, San Luis Obispo, Santa Barbara, Ventura

Summary of Impacts on Small Entities

An estimate of the number of firms in each ESU that are subject to the proposed rule under the proposed critical habitat designation and meet the SBA small business classification standard is provided in Table 2. The number of regulated small entities ranges from 379 to 3,151 depending on the ESU. The estimated co-extensive costs of section 7 consultation incurred by small entities range from $1.6 million to $18.2 million depending on the ESU. The estimated total co-extensive costs across all ESUs are $36.1 million.

Table 2. A Comparison of the Proposed Critical Habitat Designation and Critical Habitat Designation with No Areas Excluded by ESU

ESU	Proposed Critical Habitat Designation		Critical Habitat Designation with No Areas Excluded		Difference Between Critical Habitat Designations	
	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)
California Coastal chinook salmon	606	2,683,097	805	3,326,346	199	643,249
Central Valley spring-run chinook salmon	1,117	13,878,615	2,039	18,153,970	922	4,275,355
Central California Coast *O. mykiss*	3,151	5,112,630	5,322	7,651,822	2,171	2,539,192
California Central Valley *O. mykiss*	2,846	18,168,003	3,304	21,616,125	458	3,448,122
Northern California *O. mykiss*	379	1,577,166	381	2,309,142	2	731,976
South-Central California Coast *O. mykiss*	876	5,503,063	876	5,503,048	0	-14
Southern California *O. mykiss*	690	5,424,586	804	7,074,532	114	1,649,946
All ESUs [1]	**7,330**	**36,154,077**	**10,687**	**42,542,584**	**3,357**	**6,388,507**

[1] Many of the ESUs overlap, thus the row labeled "All ESUs" estimates unique effects and is not simply the sum across all ESUs.

NOAA Fisheries considered and rejected the alternative of not designating critical habitat for the 7 Pacific salmon and steelhead ESUs because it did not meet the legal requirements of the Endangered Species Act.

NOAA Fisheries also examined and rejected an alternative in which all the potential critical habitat of the 7 Pacific salmon and steelhead ESUs is proposed for designation. Under this alternative no areas are excluded for economic reasons. Through the section 4(b)(2) process of weighing benefits of exclusion against benefits of designation, NOAA Fisheries determined that the proposed designation of critical habitat provided an appropriate balance of conservation and economic mitigation and that excluding the areas proposed for exclusion would not result in extinction of the species. The proposed critical habitat designation would reduce the adverse economic impacts on entities, including small entities. It is estimated that excluding areas from the proposed rule designating critical habitat could save small entities from zero to $4.3 million in compliance costs depending on the ESU (Table 2). The estimated total savings across all ESUs are $6.4 million.

A third alternative that NOAA Fisheries examined and rejected considered excluding all habitat areas with a low or medium value. The section 4(b)(2) process determined that this alternative furthers the goal of reducing economic impacts; however, for some habitat areas the incremental economic gain from excluding that area is relatively small (Table 3). Moreover, this alternative is not sensitive to the fact that for most ESUs, eliminating all low and medium value habitat areas is likely to significantly impede conservation. Because it is doubtful that the benefits of exclusion outweigh the benefits of specifying these areas as part of the critical habitat, NOAA Fisheries rejected this alternative.

Table 3. A Comparison of the Proposed Critical Habitat Designation and Critical Habitat Designation with Low and Medium Value Areas Excluded by ESU

ESU	Proposed Critical Habitat Designation		Critical Habitat Designation with Low and Medium Value Areas Excluded		Difference Between Critical Habitat Designations	
	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)
California Coastal chinook salmon	606	2,683,097	430	2,303,132	175	379,965
Central Valley spring-run chinook salmon	1,117	13,878,615	1,071	13,107,577	46	771,039
Central California Coast *O. mykiss*	3,151	5,112,630	921	3,391,423	2,230	1,721,207
California Central Valley *O. mykiss*	2,846	18,168,003	2,498	16,816,333	348	1,351,670
Northern California *O. mykiss*	379	1,577,166	310	1,346,733	70	230,434
South-Central California Coast *O. mykiss*	876	5,503,063	393	2,981,865	483	2,521,198
Southern California *O. mykiss*	690	5,424,586	542	4,545,682	148	878,904
All ESUs [1]	**7,330**	**36,154,077**	**4,675**	**29,498,587**	**2,655**	**6,655,490**

[1] Many of the ESUs overlap, thus the row labeled "All ESUs" estimates unique effects and is not simply the sum across all ESUs.

In describing the economic effects of including or excluding a particular area from critical habitat, it is probably not accurate to include all of the co-extensive impacts because it is unlikely that the impacts attributable to critical habitat designation would ever account for the total impacts. However, in examining its extensive consultation record, NOAA Fisheries could not discern a difference in the impact of applying section 7's jeopardy requirement versus applying the adverse modification requirement. For that reason, NOAA Fisheries decided to follow the recommendation of the Tenth Circuit Court of Appeals in a related case and analyze the full impact of the adverse modification requirement, regardless of whether it is coextensive with other requirements, such as jeopardy.

NOAA Fisheries has made a substantial effort to gather information regarding the economic impact of the regulatory action on all entities, including small entities. However, unavailable or inadequate data leaves some uncertainty surrounding both the numbers of entities that will be subject to the proposed rule and the characteristics of any impacts on particular entities.

II. Specific Requirement to Prepare an IRFA

When an agency proposes regulations, the Regulatory Flexibility Act (RFA) (5 U.S.C. § 601-612) requires the agency to prepare and make available for public comment an initial regulatory flexibility analysis (IRFA) that describes the impact of the proposed rule on small businesses, nonprofit enterprises, local governments, and other small entities. The IRFA is to aid the agency in considering all reasonable regulatory alternatives that would minimize the economic impact on the small entities to which the proposed rule applies.

The level of detail and sophistication of the analysis should reflect the significance of the impact on small entities. Under 5 U.S.C., Section 603(b) of the RFA, each IRFA is required to address:

1. A description of the reasons why action by the agency is being considered;
2. A succinct statement of the objectives of, and the legal basis for, the proposed rule;
3. A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
4. A description of the projected reporting, record keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject

to the requirement and the type of professional skills necessary for preparation of the report or record;

5. An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;
6. A description of any significant alternatives to the proposed rule that accomplish the stated objectives of applicable statutes and that minimize any significant economic impact of the proposed rule on small entities.

If a proposed rule is not expected to have a significant impact on a substantial number of small entities, the RFA allows an agency to so certify the rule, in lieu of preparing an IRFA. NOAA Fisheries examined in as much detail as practical the potential impact of the proposed critical habitat designation on a sector-by-sector basis. However, unavailable or inadequate data leaves some uncertainty surrounding both the numbers of entities that will be subject to the proposed rule and the characteristics of any impacts on particular entities. In particular, uncertainty exists regarding the nature and cost of project modifications that may be requested by NOAA Fisheries in consultations on Federally authorized, licensed, permitted, or funded activities. The problem is complicated by differences among entities—even in the same sector—as to the nature and size of their current operations, contiguity to waterways, etc. Therefore, to ensure a broad consideration of impacts on small entities, NOAA Fisheries has prepared this IRFA without first making the threshold determination whether the proposed critical habitat designation could be certified as not having a significant economic impact on a substantial number of small entities. NOAA Fisheries might determine such certification to be appropriate if established by information received in the public comment period.

III. Reasons for Considering the Proposed Action

Section 4(a)(3) of the Endangered Species Act of 1973, as amended (ESA) and implementing regulations (50 CFR 424.12) require the Secretary to designate critical habitat concurrently with the listing of a species to the maximum extent prudent and determinable. Given that the 7 Pacific salmon and steelhead evolutionarily significant units are Federally-listed as threatened or endangered under the ESA, NOAA Fisheries finds that the designation of critical habitat is required.

The benefits of critical habitat designation derive from section 7 of the Act, which requires Federal agencies, in consultation with NOAA Fisheries, to ensure that actions they carry out, permit, or fund are not likely to destroy or adversely modify critical habitat of such species. Moreover, a designation of critical habitat benefits a species by highlighting areas where the species occurs and by describing the features within those areas that are essential to the conservation of the species and that may require special management considerations or protection.

IV. Objectives and Legal Basis of the Proposed Rule

The purpose of the proposed rule is to designate the critical habitat for 7 Pacific salmon and steelhead evolutionarily significant units pursuant to the ESA.

NOAA Fisheries is responsible for determining whether species, subspecies, or distinct population segments of Pacific salmon and steelhead are threatened or endangered and which areas constitute critical habitat for them under the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.). To be considered for listing under the ESA, a group of organisms must constitute a "species," which is defined in section 3 to include "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds

when mature." The agency has determined that a group of Pacific salmon or steelhead populations qualifies as a distinct population segment if it is substantially reproductively isolated and represents an important component in the evolutionary legacy of the biological species. A group of populations meeting these criteria is considered an "evolutionarily significant unit" (ESU) (56 FR 58612, November 20, 1991). In its ESA listing determinations for Pacific salmon and steelhead, NOAA Fisheries has treated an ESU as a "distinct population segment." To date, NOAA Fisheries has identified a total of 27 Pacific salmon or steelhead ESUs as threatened or endangered under the ESA, 25 of which are presently listed and two of which are proposed for listing (see 69 FR 33101, June 14, 2004)). Critical habitat has been designated for 6 of these ESUs, and 20 of these ESUs are currently under review for critical habitat designation.

As noted above, the ESA requires NOAA Fisheries to designate critical habitat for threatened and endangered species to the maximum extent prudent and determinable. Section 4(b)(2) of the ESA requires that critical habitat be designated "on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat." This section grants the Secretary [of Commerce] discretion to exclude any area from critical habitat if he determines "the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat." The Secretary's discretion is limited, as he may not exclude areas if it "will result in the extinction of the species."

The ESA defines critical habitat under section 3(5)(A) as:

"(i) the specific areas within the geographical area occupied by the species, at the time it is listed . . . on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and

(ii) specific areas outside the geographical area occupied by the species at the time it is listed . . . upon a determination by the Secretary that such areas are essential for the conservation of the species."

Once critical habitat is designated, section 7 of the ESA requires Federal agencies to ensure they do not fund, authorize or carry out any actions that will destroy or adversely modify that habitat. This requirement is in addition to the section 7 requirement that Federal agencies ensure their actions do not jeopardize the continued existence of listed species.

V. Description and Number of Small Entities to which the Proposed Rule will Apply

Definition of a Small Entity

Three types of small entities are defined in the RFA:

Small Business. Section 601(3) of the RFA defines a small business as having the same meaning as small business concern under section 3 of the Small Business Act. This includes any firm that is independently owned and operated and is not dominant in its field of operation. The U.S. Small Business Administration (SBA) has developed size standards to carry out the purposes of the Small Business Act, and those size standards can be found in 13 CFR 121.201. The size standards are matched to North American Industry Classification System (NAICS) industries. The SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.

Small Governmental Jurisdiction. Section 601(5) defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with a population of less than 50,000. Special districts may include those servicing irrigation, ports, parks and recreation, sanitation, drainage, soil and water conservation, road assessment, etc. Most tribal governments will also meet this standard. When counties have populations greater than 50,000, those municipalities of fewer than 50,000 can be identified using population reports. Other types of small government entities are not as easily identified under this standard, as they are not typically classified by population.

Small Organization. Section 601(4) defines a small organization as any not-for-profit enterprise that is independently owned and operated and not dominant in its field. Small organizations may include private hospitals, educational institutions, irrigation districts, public utilities, agricultural co-ops, etc. Depending upon state laws, it may be difficult to distinguish whether a small entity is a government or non-profit entity. For example, a water supply entity may be a cooperative owned by its members in one case and in another a publicly chartered small government with the assets owned publicly and officers elected at the same elections as other public officials. NOAA Fisheries encourages comment from any small organization that believes the proposed critical habitat designation may impact its activities.

Description of Small Entities to Which the Proposed Rule will Apply

Federal courts and Congress have indicated that a RFA analysis should be limited to small entities subject to the proposed regulation.[1] As such, small entities to which the proposed rule will not apply are not considered in this analysis.[2]

As noted previously, section 7 of the ESA requires each Federal agency to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. To prevent this result, Federal agencies must "consult" with NOAA Fisheries.

The consultation process is not restricted to direct agency action, but is required whenever a Federal nexus is present, such as when a Federal agency must authorize, approve, or fund a state

[1] *Mid-Tec Elec. Coop v. FERC*, 773 F.2d 327 (D.C. Cir. 1985).

[2] *Cement Kiln Recycling Coalition et. al. v. EPA*, 255 F.3d 855 (2001).

or private action. Activities on land owned by individuals, organizations, states, local and Tribal governments only require consultation with NOAA Fisheries if their actions involve Federal funding, licensing, permitting, or authorization. Federal actions not affecting the species or its critical habitat, as well as activities on non-Federal lands that are not Federally funded, authorized, licensed, or permitted, do not require section 7 consultation. For consultations concerning activities on Federal lands, the relevant Federal agency consults with NOAA Fisheries. For consultations where the consultation involves an activity proposed by a state or local government or a private entity (the "applicant"), the Federal agency with the nexus to the activity (the "action agency") serves as the liaison with NOAA Fisheries.[3]

Examples of actions that may be subject to a Federal nexus and a section 7 consultation include, but are not limited to:

(a) actions intended to conserve listed species or their habitat;

(b) the promulgation of regulations;

(c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or

(d) actions directly or indirectly causing modifications to the land, water, or air.

Based on an examination of an array of activities with a Federal nexus sufficient to trigger section 7 consultation requirements regarding critical habitat, this economic analysis identified the nature of the small businesses that will be subject to the proposed rule. Special attention was paid to identifying small businesses expected to face more significant impacts than other industry sectors as a result of the rule. Table 4 presents a list of the major relevant activities with a Federal nexus and descriptions of the industry sectors involved in those activities, including NAICS codes and the SBA thresholds for determining whether a firm is small.

[3] Applicant refers to any person who requires formal approval or authorization from a Federal agency as a prerequisite to conducting the action (50 CFR 402.02).

Table 4. Major Relevant Activities with a Federal Nexus and a Description of the Industry Sectors Engaged in Those Activities

Major Relevant Activity and Federal Nexus	Description of Industry Sector	NAICS Code	SBA Size Standard
§4 and 23(b) of the Federal Power Act give the Federal Energy Regulatory Commission (FERC) the authority to license projects located on Federal lands or navigable or commerce clause waters and which use water to generate power.	**Hydroelectric Power Generation** This industry comprises establishments primarily engaged in operating hydroelectric power generation facilities. These facilities use water power to drive a turbine and produce electric energy. The electric energy produced in these establishments is provided to electric power transmission systems or to electric power distribution systems.	221111	4 million megawatt hours for the preceding fiscal year[1]
Under §10 of the Rivers and Harbors Act, the U.S. Army Corps of Engineers (ACOE) permits in-water structures, including irrigation pipes and other water withdrawal structures.	**Water Supply and Irrigation Systems** This industry comprises establishments primarily engaged in operating water treatment plants and/or operating water supply systems. The water supply system may include pumping stations, aqueducts, and/or distribution mains. The water may be used for drinking, irrigation, or other uses.	22131	$6 million average annual receipts
Federal nexus activities for timber and livestock operators include timber sales and grazing allotments permitted by the U.S. Forest Service or Bureau of Land Management.	**Forestry and Logging** Industries in the Forestry and Logging sector grow and harvest timber on a long production cycle (i.e., of 10 years or more).	113	$6 million average annual receipts
	Beef Cattle Ranching and Farming This industry comprises establishments primarily engaged in raising cattle (including cattle for dairy herd replacements).	112111	$750,000 average annual receipts
The typical Federal nexuses for road/bridge construction and maintenance activities are either funding from the Federal Highway Administration for transportation projects and/or Clean Water Act §404 permitting from the ACOE for projects with the potential to discharge dredged or fill material into navigable waters. Roads, highways, and bridges may also be considered point sources of pollution and require a National Pollutant Discharge Elimination System (NPDES) storm water permit under §402 of the Clean Water Act.	**Highway, Street, and Bridge Construction** This industry comprises establishments primarily engaged in the construction of highways (including elevated), streets, roads, airport runways, public sidewalks, or bridges. The work performed may include new work, reconstruction, rehabilitation, and repairs.	237310	$28.5 million average annual receipts

Major Relevant Activity and Federal Nexus	Description of Industry Sector	NAICS Code	SBA Size Standard
The primary Federal nexus for utility related activities is the ACOE, which authorizes Clean Water Act §404 permits for projects with the potential to discharge dredged or fill material into navigable waters. Another possible nexus for utility related activities is FERC licensing of the interstate transmission of electricity, oil, and natural gas by pipeline.	**Electric Power Generation, Transmission and Distribution** This industry group comprises establishments primarily engaged in generating, transmitting, and/or distributing electric power. Establishments in this industry group may perform one or more of the following activities: (1) operate generation facilities that produce electric energy; (2) operate transmission systems that convey the electricity from the generation facility to the distribution system; and (3) operate distribution systems that convey electric power received from the generation facility or the transmission system to the final consumer.	221111, 221112, 221113, 221119, 221121, 221122	4 million megawatt hours for the preceding fiscal year [1]
	Natural Gas Distribution This industry comprises: (1) establishments primarily engaged in operating gas distribution systems (e.g., mains, meters); (2) establishments known as gas marketers that buy gas from the well and sell it to a distribution system; (3) establishments known as gas brokers or agents that arrange the sale of gas over gas distribution systems operated by others; and (4) establishments primarily engaged in transmitting and distributing gas to final consumers.	22121	500 employees
	Water Supply and Irrigation Systems (See description above)	22131	$6 million average annual receipts
	Sewage Treatment Facilities This industry comprises establishments primarily engaged in operating sewer systems or sewage treatment facilities that collect, treat, and dispose of waste.	221320	
Sand and gravel mining operations may request Clean Water Act §404 permits from the ACOE for projects with the potential to discharge dredged or fill material into navigable waters.	**Construction Sand and Gravel Mining** This industry comprises establishments primarily engaged in one or more of the following: (1) operating commercial grade (i.e., construction) sand and gravel pits; (2) dredging for commercial grade sand and gravel; and (3) washing, screening, or otherwise preparing commercial grade sand and gravel.	212321	500 employees

Major Relevant Activity and Federal Nexus	Description of Industry Sector	NAICS Code	SBA Size Standard
Private parties may request permits from the ACOE for a variety of activities that occur in waterways or involve modifying navigable waterways, such as construction in waterways (e.g., breakwaters, docks, piers), dredging projects, shoreline stabilization, construction and maintenance of oil and gas pipelines, irrigation withdrawal structures, and state or local water supply projects.	**Water and Sewer Line and Related Structures Construction** This industry comprises establishments primarily engaged in the construction of water and sewer lines, mains, pumping stations, treatment plants and storage tanks.	237110	$28.5 million average annual receipts
	Oil and Gas Pipeline and Related Structures Construction This industry comprises establishments primarily engaged in the construction of oil and gas lines, mains, refineries, and storage tanks.	237120	
	Power and Communication Line and Related Structures Construction This industry comprises establishments primarily engaged in the construction of power lines and towers, power plants, and radio, television, and telecommunications transmitting/receiving towers.	237130	
	Marinas This industry comprises establishments engaged in operating docking and/or storage facilities for pleasure craft owners, with or without one or more related activities, such as retailing fuel and marine supplies; and repairing, maintaining, or renting pleasure boats.	713930	$6 million average annual receipts
	Other Heavy and Civil Engineering Construction This industry comprises establishments primarily engaged in heavy and engineering construction projects (excluding highway, street, bridge, and distribution line construction).	237990	$17 million average annual receipts
The most common nexus for residential and related development is a Federal permit for stormwater outfall construction/expansion issued by the ACOE.	**Land Subdivision** This industry comprises establishments primarily engaged in servicing land and subdividing real property into lots, for subsequent sale to builders. Servicing of land may include excavation work for the installation of roads and utility lines. Land subdivision precedes building activity and the subsequent building is often residential, but may also be commercial tracts and industrial parks	237210	$6 million average annual receipts

Major Relevant Activity and Federal Nexus	Description of Industry Sector	NAICS Code	SBA Size Standard
As authorized by the Clean Water Act, NPDES permit program administered by the Environmental Protection Agency controls water pollution by regulating point sources that discharge pollutants (including thermal pollutants) into U.S. waters. Point sources are discrete conveyances such as pipes or man-made ditches. Industrial and municipal facilities must obtain NPDES permits if their discharges go directly to surface waters. Separate storm sewer systems and combined sewer and overflow systems may also be subject to NPDES permitting requirements.	**Fishing, Hunting, Trapping** Industries in this sector harvest fish and other wild animals from their natural habitats and are dependent upon a continued supply of the natural resource. The harvesting of fish is the predominant economic activity of this sector and it usually requires specialized vessels that, by the nature of their size, configuration and equipment, are not suitable for any other type of production, such as transportation.	114	$3.5 million average annual receipts
	Food Manufacturing Industries in this sector transform livestock and agricultural products into products for intermediate or final consumption. The industry groups are distinguished by the raw materials (generally of animal or vegetable origin) processed into food products.	311	500 employees
	Sewage Treatment Facilities (See description above)	221320	$6 million average annual receipts
	Paper and Pulp Mills This industry comprises establishments primarily engaged in manufacturing paper and/or pulp.	322121, 322122, 322110	750 employees
	Wood Product Manufacturing Industries in this sector manufacture wood products, such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, manufactured homes (i.e., mobile home), and prefabricated wood buildings.	321	500 employees

[1] NAICS codes 221111, 221112, 221113, 221119, 221121, 221122 – A firm is small if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours.

Small governments as well as small businesses own and operate various hydroelectric power facilities, water supply and irrigation systems, and sewage treatment facilities. Moreover, small governments may also undertake utility line projects and carry out land subdivision for residential, commercial, and industrial development. Consequently, both small governments and small businesses will be directly regulated by the proposed rule. The number of small governmental entities that will be directly affected by the rule is unknown. However, a review of the historical consultation record suggests that the number of consultations involving small governments is likely to be small.

Estimate of the Number of Small Entities to Which the Proposed Rule will Apply

NOAA Fisheries has determined that the most practical unit of analysis for designating critical habitat of the 7 listed Pacific salmon/steelhead ESUs is a watershed unit defined by the U.S.

Geological Service as a hydrologic unit. Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system. NOAA Fisheries determined the smallest practical hydrologic unit to analyze is that designated by a fifth field code (referred to as a fifth field HUC or HUC5).

However, it is not possible to directly determine the number of firms in each industry sector in each of the hydrologic units designated as critical habitat because of the geo-political coverage of business activity data sets. The closest approximations to the units of interest for which data are available are counties. Counties included in this analysis area were identified using data provided by NOAA Fisheries on watershed land area included in the ESU and maps provided by NOAA Fisheries identifying the boundary of the ESU. Where the intersection of a county and the ESU is unpopulated, that county has been excluded from the list unless the area of the intersection accounts for more than five percent of the county area.

For each county included in the analysis, an estimate of the total number of entities within each industry sector subject to the regulation was derived by searching the D&B Duns Market Identifiers (File 516) by NAICS code. This directory file is produced by Dun & Bradstreet, Inc. and contains basic company data on U.S. business establishment locations, including public, private, and government organizations. Census tract data from the 2000 Census of Population and Housing were used to indirectly estimate the number of businesses in each ESU by assuming that the number of businesses is directly proportional to population density.

The SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.[4] However, because complete ownership and affiliation information was unavailable for the firms in each ESU, some firms may have been incorrectly identified as small businesses. Consequently, it is possible that this analysis overestimates the number of small entities that will be regulated under the proposed action.

An estimate of the number of firms in each ESU that are subject to the proposed rule and meet the SBA small business classification standard is provided in Appendix A: Table 14-Table 27. Estimates of the number of regulated firms in each ESU are summarized in Table 5. An estimate of the total number of regulated entities across all ESUs is also provided; this number accounts for the overlap between ESUs for some of the watersheds.

[4] The SBA's "general principles of affiliation" are set forth in regulations at 13 CFR 121.103.

Table 5. Estimated Number of Regulated Small Entities by ESU and Industry Sector

ESU	Hydro-electric Power Generation[1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construc-tion	Electric Services/ Natural Gas Distribution[1]	Construc-tion Sand and Gravel Mining	Utility Line Construc-tion	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Total
California Coastal chinook salmon	11	40	109	45	52	13	6	43	27	77	182	606
Central Valley spring-run chinook salmon	39	85	89	81	116	47	10	129	90	198	233	1,117
Central California Coast *O. mykiss*	45	138	38	76	274	61	9	265	185	1,031	1,030	3,151
California Central Valley *O. mykiss*	87	172	97	226	281	101	23	306	212	676	665	2,846
Northern California *O. mykiss*	8	22	91	34	32	8	4	23	13	36	108	379
South-Central California Coast *O. mykiss*	20	79	4	85	81	21	5	83	48	203	247	876
Southern California *O. mykiss*	18	43	3	29	42	16	1	70	50	215	202	690
All ESUs [2]												

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

[2] Many of the ESUs overlap, thus the row labeled "All ESUs" estimates unique effects and is not simply the sum across all ESUs.

VI. Description of the Projected Reporting, Record Keeping and Other Compliance Requirements of the Proposed Rule

Description of Compliance Requirements of the Proposed Rule

As discussed above, section 7 of the ESA requires Federal agencies to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. The ESA does not place requirements on any other parties to consider the effect of their actions on critical habitat. As a result, non-Federal entities can only be affected by critical habitat designation when the activities they carry out have a Federal nexus.

The proposed rule does not directly mandate "reporting" or "record keeping" within the meaning of the Paperwork Reduction Act. However, modifications to projects and activities taking place on designated land may include increased reporting or record keeping requirements. Review/reporting is already part of standard practices for managing activities (e.g., timber harvesting, grazing, and mining) in riparian areas, and the increased reporting costs associated with the proposed designation of critical habitat are expected to be minimal. Thus, the marginal reporting or record keeping costs, if any, that would be imposed by the proposed rule on regulated entities, including small entities, would not be substantial. Since the proposed rule does not directly mandate "reporting" or "record keeping" within the meaning of the Paperwork Reduction Act, the rule does not require professional skills for the preparation of "reports" or "records" under that Act.

The proposed rule contains compliance requirements not subject to the Paperwork Reduction Act. Specifically, a mandatory legal consequence of a critical habitat designation is the section 7 requirement of Federal agencies described above. The section 7 consultation process may involve both informal and formal consultation with NOAA Fisheries. Informal section 7 consultation is designed to assist the Federal agency and any applicant in identifying and resolving potential conflicts at an early stage in the planning process (50 CFR 402.13). Informal consultation consists of informal discussions between NOAA Fisheries and the agency concerning an action that may affect a listed species or its designated critical habitat. In preparation for an informal consultation, the Federal action agency or applicant must compile all biological, technical, and legal information necessary to analyze the scope of the activity and discuss strategies to avoid, minimize, or otherwise reduce impacts to listed species or critical habitat. During the informal consultation, NOAA Fisheries makes advisory recommendations, if appropriate, on ways to minimize or avoid adverse effects. If agreement can be reached, NOAA Fisheries will concur in writing that the action, as revised, is not likely to adversely affect listed species or critical habitat. Informal consultation may be initiated via a phone call or letter from the action agency, or a meeting between the action agency and NOAA Fisheries.

A formal consultation is required if the proposed action is likely to adversely affect listed species or designated critical habitat (50 CFR 402.14). An analysis conducted during formal consultations determines whether a proposed agency action is likely to jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat. Some of the activities NOAA Fisheries believes could result in the destruction or adverse modification of critical habitat of listed Pacific salmon and steelhead ESUs include, but are not limited to:

1. Land-use activities that adversely affect a listed Pacific salmon/steelhead ESU's habitat (e.g., logging, grazing, or road construction, particularly when conducted in riparian areas or in areas susceptible to mass wasting and surface erosion);

2. Destruction or alteration of a listed Pacific salmon/steelhead ESU's habitat (aside from habitat restoration activities), such as removal of large woody debris and "sinker logs" or riparian shade canopy, dredging, discharge of fill material, draining, ditching, diverting, blocking, or altering stream channels or surface or ground water flow;
3. Discharges or dumping of toxic chemicals or other pollutants (e.g., sewage, oil, gasoline) into waters or riparian areas supporting the listed Pacific salmon/steelhead ESUs;
4. Violation of discharge permits;
5. Pesticide applications in violation of Federal restrictions;
6. Introduction of non-native species likely to prey on a listed Pacific salmon/steelhead ESU or displace it from its habitat;
7. Water withdrawals in areas where important spawning or rearing habitats may be adversely affected, or otherwise altering streamflow when it is likely to impair spawning, migration, or other essential functions;
8. Constructing or maintaining barriers that eliminate or impede a listed Pacific salmon/steelhead ESU's access to habitat essential for its survival or recovery;
9. Removing, poisoning, or contaminating plants, fish, wildlife, or other biota required by a listed Pacific salmon/steelhead ESU for feeding, sheltering, or other essential functions;
10. Releasing non-indigenous or artificially propagated individuals into a listed Pacific salmon/steelhead ESU's habitat;
11. Constructing or operating inadequate fish screens or fish passage facilities at dams or water diversion structures in a listed Pacific salmon/steelhead ESU's habitat;
12. Constructing or using inadequate bridges, roads, or trails on stream banks or unstable hill slopes adjacent or above a listed Pacific salmon/steelhead ESU's habitat; or
13. Constructing or using inadequate pipes, tanks, or storage devices containing toxic substances, where the release of such a substance is likely to significantly modify or degrade a listed Pacific salmon/steelhead ESU's habitat.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where critical habitat is subsequently designated and the Federal agency has retained discretionary involvement or control over the action or such discretionary involvement or control is authorized by law. Consequently, some Federal agencies may request reinitiation of consultation or conference on actions for which formal consultation has been completed, if those actions may affect designated critical habitat or adversely modify or destroy proposed critical habitat.

The biological opinion is the document that states the opinion of NOAA Fisheries as to whether or not the Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. Regulations at 50 CFR 402.1 guide the section 7 consultation process. If jeopardy or adverse modification is found, NOAA Fisheries will suggest those reasonable and prudent alternatives that can be taken by the Federal agency or applicant in implementing the agency action. Reasonable and prudent alternatives refer to alternative actions identified during formal consultation that can be implemented in a manner consistent with the intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that NOAA Fisheries believes would avoid the likelihood of jeopardizing the continued existence of listed species or resulting in the destruction or adverse modification of critical habitat. Reasonable and prudent alternatives can vary from slight project

modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

In formulating its biological opinion and any reasonable and prudent alternatives, NOAA Fisheries must use the best scientific and commercial data available and must give appropriate consideration to any beneficial actions taken by the Federal agency or applicant, including any actions taken prior to the initiation of consultation. In addition, NOAA Fisheries must utilize the expertise of the Federal agency and any applicant in identifying reasonable and prudent alternatives.

A Federal agency and an applicant may elect to implement a reasonable and prudent alternative associated with a biological opinion that has found jeopardy or adverse modification of critical habitat. An agency or applicant could alternatively choose to seek an exemption from the requirements of the ESA or proceed without implementing the reasonable and prudent alternative. However, unless an exemption was obtained, the Federal agency or applicant would be at risk of violating section 7(a)(2) of the ESA if it chose to proceed without implementing the reasonable and prudent alternatives.

Description of Compliance Costs Associated with the Proposed Rule

There are two primary types of compliance costs that regulated small entities may incur upon designation of critical habitat: 1) administrative costs incurred from section 7 consultation (formal or informal); and 2) costs incurred from section 7 consultation associated with project design or operation modification and project delays.[5] A summary of the costs associated with the proposed critical habitat designation is provided in Table 6 to indicate how the proposed rule may affect some of the various sectors and to aid public comment.

Table 6. Categories of Potential Compliance Costs Associated with the Proposed Rule

Categories of Potential Costs	Examples
Administrative costs associated with section 7 consultations: ▪ new consultations ▪ reinitiated consultations ▪ extended consultations	The value of time spent in conducting section 7 consultations (e.g., costs of phone calls, letter writing, meetings, travel time) and, in some cases, the costs of compiling biological, technical, and legal information and/or preparing a biological assessment.
Costs of modifications to projects, activities, and land uses.	Opportunity costs associated with seasonal project changes, relocation or redesign of project activities, project delays and/or cessation of certain activities.

The administrative costs of participating in consultation include the cost of applicants' time spent attending meetings, making phone calls, and preparing letters. In addition, applicants may spend time reviewing and commenting on the biological opinion before its promulgation (if a "jeopardy biological opinion" is to be issued). The duration and complexity of these interactions depends on a number of variables, including the type of consultation, the species, the activity of concern, the region where critical habitat has been proposed, and the involved parties. In some cases, applicants may also incur the costs of developing, under the direction of NOAA Fisheries, a biological assessment. Biological assessments are prepared to evaluate the potential effects of a proposed project on listed species or designated critical habitat.

[5] Compliance costs are those expenses borne by entities as they change their behavior to come into compliance with regulations.

The section 7 consultation process may also involve some modifications to a proposed or existing project. Projects may be modified in response to voluntary conservation measures suggested by NOAA Fisheries and agreed to by the applicant during the informal consultation process in order to avoid or minimize impact to a species and/or its habitat, thereby removing the need for formal consultation. Alternatively, formal consultations may involve modifications that are included in the project description as avoidance and minimization measures or included in the biological opinion on the project as reasonable and prudent measures. Of the activities and projects that are potentially affected by section 7 consultations, many are expected to involve no project modifications or very minor ones.

Applicants may also incur project delay costs associated with the consultation process. Regardless of funding (i.e., private or public), projects and activities are generally undertaken only when the benefits exceed the costs, given an expected project schedule. If costs increase, benefits decrease, or the schedule is delayed, a project or activity may no longer have positive benefits, or it may be less attractive to the party funding the project. However, the magnitude of such delays is unclear; the formal consultation process may add significantly to time lags before project implementation, or the action agency and the individual entity initiating the activity may be able to conduct a section 7 consultation simultaneously with other necessary permitting processes, thus leading to no additional delays.

To further assist small entities in understanding the nature of the impact of the proposed rule on their activities, the following discussion identifies typical project modifications that may be requested in consultations involving the listed Pacific salmon and steelhead ESUs:

Hydroelectric Power Generation. Small hydroelectric producers could be affected by project modification costs at the time of facility re-licensing. Alterations of operations affecting timing, amount and duration of water released could be costly in terms of lost generation capacity and foregone revenue over the life of a 30 to 50 year license. In addition, facilities may incur fish passage, habitat protection or restoration, and biological study costs.

Water Supply and Irrigation Systems. Section 7 consultation can add a cost burden to water supply activities by modifying infrastructure development projects and governing the operation of water projects (e.g., amount of water diverted).

Forestry and Logging. Project modifications may include yarding system changes to protect soils and reduce sediment loads in streams; repairing and replacing culverts that block upstream passage to fish; and road maintenance and repair to reduce soil erosion and sediment runoff. However, most costs related to roadwork, culvert upgrades and changes in logging and yarding methods will be passed on to the USFS through lower stumpage prices. Expanding the buffers along streamside corridors would remove land from timber production, thereby reducing the flow of raw material into the forest products industry.

Beef Cattle Ranching and Farming. The major cost components come from the areas of monitoring and elimination of conflicts (e.g., fencing and providing off-stream water). Date restrictions or the enforcement of stubble height restrictions can lead to an animal unit month (AUM) reduction on a particular allotment.[6] As a result of such reductions, ranchers will generally move the cattle to a different allotment or private lands. If they move the cattle to private lands they may have to pay a higher grazing fee, reflecting the different responsibilities the rancher has on public land for monitoring livestock, fence repairs and moving livestock versus private rented land, for which these responsibilities are often taken over by the land owner. Thus, while costs may be shifted, this analysis does not predict significant additional costs to grazing permittees. In addition, when date restrictions are imposed, the USFS often can expand

[6] Date restrictions refer to conditions specifying when activities should or should not be undertaken.

other allotments or increase AUMs on the restricted parcel to lessen any impact on the permittee. In cases where modifications in on-off dates and stocking levels result in reductions in total leased AUMs by a rancher, the total asset value of a permittee's privately held land may be impacted. Agricultural lending institutions often consider the number of historically leased Federal and state AUMs associated with a private ranching operation in determining the ranch's market value. Significant reductions in Federally-permitted AUMs could impact this market value. Reductions in total AUMs tend to be small and marginal in nature, and are often offset with available Federal, state, or private grazing elsewhere. The potential for this type of impact exists, but is not estimated due to the likely small magnitude and uncertain nature of the possible impact.

Highway, Street, and Bridge Construction. The typical project modification for bridge construction, maintenance, and removal projects in rivers proposed as critical habitat is date restrictions on in-stream work to protect spawning or migrating fish. Date restrictions have the potential to increase costs, but will not do so in every case. Larger projects are more likely to have date restriction costs. The imposition of date restrictions forces contractors to plan carefully and schedule the construction sequence with diligence. A large project coupled with a small window or unforeseen difficulties can lead to contractors being unable to finish their in-stream work during the allowed period. This is more likely with large projects than small projects. Most of the costs associated with project modification compliance will be borne by the Federal government either directly or through its funding of State Department of Transportation projects.

Electric Services/Natural Gas Distribution. Common project modifications include restrictions on the duration and extent of in-stream work, replacement/restoration of habitat, on-site monitoring, and efforts to minimize take.

Construction Sand and Gravel Mining. Consultations on mining activities conducted within the riparian areas of this designation could lead to watershed assessment requirements, a reduction in the length of the mining season, buffer strips, restrictions as to type of equipment allowed, timing of equipment use and additional requirements for stream crossings.

Utility Line Construction/Marinas/Other Heavy and Civil Engineering and Construction. Section 7 implementation on in-stream activities may impact the entities conducting the activities. Economic impacts result from direct project costs associated with restrictions on the duration and extent of in-water work, erosion and sediment control measures, heavy equipment restrictions, and efforts to minimize take.

Land Sub-division. The designation of critical habitat is anticipated to have a negligible impact on regional market supply for residential, commercial, or industrial land; therefore, the primary impacts will be felt by individual property owners. Typical project modifications associated with stormwater outfall projects include implementing state recommended stormwater plans, activities to reduce stormwater volume and/or pollutants, minimizing hardscape of the outfall structure, and vegetation replacement.

NPDES-Permitted Activities (Fishing, Hunting, Trapping; Food Manufacturing; Sewage Treatment Facilities; Paper and Pulp Mills; Wood Product Manufacturing). Costs related to NPDES-permitted activities include impacts resulting from newly developed water quality standards criteria related to temperature. EPA and NOAA Fisheries recently authored guidance to states and Tribes on the development of temperature criteria deemed protective of salmonids. Impacts of section 7 implementation resulting from NOAA's consultation on the temperature criteria will vary depending on a facility's compliance with existing temperature standards.

Estimate of the Economic Impacts on Small Entities

For the purpose of this analysis, costs to small entities include those costs borne directly by small entities and not those costs borne directly by Federal agencies and passed on to small entities (e.g., higher electricity prices charged by Federal power marketing agencies). Costs borne directly by small entities include the administrative costs of participating in section 7 consultation and the costs resulting from modifying project activities to comply with section 7.

To be conservative (i.e., more likely to overstate impacts than understate them), this analysis assumes that for most activities, private third parties will bear all of the total section 7 costs. However, for some activities third party involvement is known to be minimal (i.e., only the action agency and/or NOAA Fisheries are expected to incur costs). In particular, this analysis anticipates that Federal agencies will bear 90 percent of the total section 7 costs associated with forestry and logging activities on Federal lands and with road and bridge construction and maintenance. The remaining ten percent of costs are expected to be borne by private entities. Most of the project modification costs for forestry and logging activities on Federal lands will likely either be borne directly by or passed onto the Federal government. Additional monitoring costs and the cost of some of the additional road work will be borne directly by the USFS, while costs related to remaining road work and changes in logging and yarding methods will be passed on to the USFS through lower stumpage prices. With respect to FHWA-related consultations for road and bridge construction/maintenance, this analysis anticipates that the majority of costs associated with project modification compliance will be borne by the Federal government either directly or through their funding of State Department of Transportation projects. Impacts on indirectly regulated entities (e.g., road construction companies contracted by State DOTs) are not considered in this analysis.

This analysis does not distinguish between economic impacts caused by the listing of the Pacific salmon and steelhead ESUs and those additional costs and benefits created solely by the proposed critical habitat designation. Section 7 consultations are required upon the listing of a species to ensure federal actions will not jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. Section 7 consultations on habitat-modifying actions may lead to project modifications because they will result in jeopardy, or adverse modification of critical habitat, or both. Although NOAA Fisheries reviewed its extensive consultation record, it was unable to distinguish incremental project modifications that were required because of the critical habitat designation, over and above the application of the jeopardy standard. In 2001, the U.S. Court of Appeals for the Tenth Circuit instructed the U.S. Fish and Wildlife Service to conduct a full analysis of all of the economic impacts of critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes.[7] Mindful of the Tenth Circuit's instruction regarding the statutory requirement to consider the economic impact of designation, NOAA Fisheries examined its extensive consultation record. The agency could not discern a distinction in the impacts of applying the jeopardy provision versus the adverse modification provision in occupied habitat. Given the inability to detect a measurable difference between the impacts of applying these two provisions, the only reasonable alternative seemed to be to follow the recommendation of the Tenth Circuit to measure the full impact of the adverse modification requirement, regardless of whether it is coextensive with the jeopardy requirement.
The greatest share of the costs associated with the consultation process stem from project modifications and mitigation (as opposed to the consultation itself). Indeed, the administrative costs associated with the consultation itself are relatively minor, with third party costs estimated to range from $1,200 to $4,100 per consultation. The cost of developing a biological assessment

[7] *New Mexico Cattlegrowers' Association v. U.S. Fish and Wildlife Service*, 248 F.3d 1277 (10th Cir. 2001)

is estimated to be between $3,700 and $67,500. Therefore, small entities are unlikely to be significantly affected by consultations that do not involve costly project modifications.

Unavailable or inadequate data leaves some uncertainty surrounding the nature and cost of project modifications that may be requested by NOAA Fisheries in consultations on Federally authorized, permitted, or funded activities. The problem is complicated by differences among entities even in the same sector as to the nature and size of their current operations, contiguity to waterways, etc. Moreover, the ability of different entities to adapt to the incremental regulatory burden by changing the manner in which they operate, modifying their mix of products, or passing on the additional costs in the form of price increases or user fees is unknown.

Using spatial data, the analysis identified projects and activities that either had or could have a Federal nexus on lands being considered for critical habitat. The analysis used these data to project the volume of projects and activities that could reasonably be foreseen to be covered by a section 7 consultation once critical habitat was designated. Estimates of the costs per project for each industry sector were based on a review of the historical consultation record (Appendix B: Table 30). The costs were annualized over a 5- to 30-year time horizon, depending on the expected life of the project. It is likely that businesses that do not meet SBA's small business size standards will have larger projects and, therefore, greater costs per project. However, in order to present a conservative (i.e., high end) estimate of per-project costs, this analysis assumes that these costs are as high for small businesses as they are for larger ones.

An estimate of the number of projects that would be affected by section 7 consultation was only available for all businesses, both large and small. It is likely that businesses that do not meet SBA's small business size standards will have a greater number of affected projects per entity. However, due to a lack of information regarding the number of affected projects involving small entities, this analysis conservatively assumes that the ratio of small entity projects to all projects is equal to the ratio of small entities to all entities.[8]

An estimate of the annual economic impacts on small entities in each ESU by industry sector is provided in Appendix B: Table 31-Table 37. The tables present the expected total economic cost of actions taken under section 7 of the ESA associated with protection of the 7 Pacific salmon and steelhead ESUs and their proposed critical habitat, including those costs attributable co-extensively to the listing of the 7 Pacific salmon and steelhead ESUs as endangered or threatened. Both overall compliance costs of section 7 consultation and per-entity compliance costs are presented. These tables likely establish an upper-bound to the compliance costs due to the fact that some of the costs associated with section 7 consultation are expected to be borne directly by or passed onto the Federal government. Only the estimated annualized section 7 costs incurred by regulated small entities in the Forestry and Logging and Highway, Street, and Bridge Construction Sectors were adjusted downward to reflect this likelihood. The analysis assumes that 90 percent of the estimated annualized section 7 costs for these sectors will be born by the Federal action agencies; with private entities incurring the remaining ten percent.

[8] This analysis estimated the proportion of regulated entities that are small entities to be greater than 60 percent in all of the industry sectors considered, with the exception of the Natural Gas Distribution Sector (in which small entities represent 46 percent of the total). The proportion of regulated entities that are small entities in the Hydroelectric Power Generation and Electric Services Sectors is unknown.

Estimates of the co-extensive costs of section 7 consultation to small entities in each ESU are summarized in Table 7. An estimate of the total co-extensive costs across all ESUs is also provided; this number accounts for the overlap between ESUs for some watersheds.

Table 7. Estimated Annual Economic Impacts on Small Entities by ESU and Industry Sector

		Annual Impact on Small Entities											
ESU	**Total**	**Hydro-electric Power Generation**[1]	**Water Supply and Irrigation Systems**	**Forestry and Logging**	**Beef Cattle Ranching and Farming**	**Highway, Street, and Bridge Construc-tion**	**Electric Services/ Natural Gas Distribution**[1]	**Construc-tion Sand and Gravel Mining**	**Utility Line Construc-tion**	**Other Heavy and Civil Engineering and Construction**	**Land Sub-division**	**NPDES-Permitted Activities**
California Coastal chinook salmon	$2,683,097	$320,388	$803,818	$507,772	$169,309	$11,673	$0	$297,348	$263,528	$106,962	$33,686	$168,612
Central Valley spring-run chinook salmon	$13,878,615	$8,879,125	$863,770	$294,314	$205,491	$36,102	$58,045	$292,439	$1,264,438	$1,557,019	$186,142	$241,730
Central California Coast *O. mykiss*	$5,112,630	$10,603	$3,001,037	$34,393	$16,155	$31,304	$0	$177,136	$369,741	$928,901	$226,711	$316,650
California Central Valley *O. mykiss*	$18,168,003	$9,456,443	$1,559,234	$457,638	$165,118	$79,812	$71,071	$453,484	$2,119,010	$2,917,974	$520,404	$367,816
Northern California *O. mykiss*	$1,577,166	$138,824	$227,829	$549,677	$88	$2,303	$0	$290,023	$235,840	$0	$10,729	$121,854
South-Central California Coast *O. mykiss*	$5,503,063	$181,565	$2,403,306	$424,814	$1,283,542	$15,180	$277,001	$63,985	$473,346	$154,991	$84,888	$140,443
Southern California *O. mykiss*	$5,424,586	$0	$1,067,319	$621,807	$10,597	$6,547	$596,002	$29,212	$449,608	$2,370,734	$136,249	$136,511
All ESUs[2]	**$36,154,077**	**$9,968,999**	**$8,502,889**	**$2,480,214**	**$1,659,884**	**$132,150**	**$1,008,705**	**$936,990**	**$3,403,888**	**$6,026,301**	**$985,336**	**$1,048,721**

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the 7 Pacific salmon and steelhead ESUs. Costs are presented on an annualized basis. These estimates likely provide an upper limit to the compliance costs due to the fact that some of the costs associated with section 7 consultation are expected to be borne directly by or passed onto the Federal government (only the estimated annualized section 7 costs incurred by regulated small entities in the Forestry and Logging and Highway, Street, and Bridge Construction Sectors were adjusted downward to reflect this likelihood).

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

[2] Many of the ESUs overlap, thus the row labeled "All ESUs" estimates unique effects and is not simply the sum across all ESUs.

Estimate of the Regulatory Burden and Distributional Effects

Compliance costs may affect the economic viability of small entities or their ability to provide services. The severity of the economic impact depends on the magnitude of the compliance costs associated with the rule and the economic and financial characteristics of the affected firms and industries. Industries and firms that are relatively profitable will be better able to absorb new compliance costs without experiencing financial distress.

This analysis assessed whether compliance costs of section 7 consultation might unduly burden the small entities within a particular group or industry sector. To determine if the compliance costs would impose a substantial cost burden the analysis examined these costs as a percentage of profits.

Information on revenue, profit or other measures of economic sustainability is unavailable for the small entities to which the proposed rule will apply. However, the profitability of businesses in each industry sector was approximated using data from Risk Management Association's (RMA) Annual Statement Studies and IMPLAN, an economic input-output software package developed by MIG, Inc. The profits of small entities in each sector were identified in these data sources using SBA size standards. A more detailed description of the methodology used to determine the profitability of small entities is provided in Appendix C.

Estimates of the profits of a typical (i.e., representative or average) small entity in each industry sector are provided in Table 8. Per-entity compliance costs were then expressed as a percentage of the profitability of a typical business to assess the relative impact of regulatory costs on business and industry viability (Table 9). Compliance costs as a proportion of profits exceeded ten percent for the average directly regulated small entity in the Forestry and Logging Sector in the South-Central California Coast *O. mykiss* ESU and Southern California *O. mykiss* ESU and in the Beef Cattle Ranching and Farming Sector in the South-Central California Coast *O. mykiss* ESU. The use of average compliance costs and profitability may underestimate or overestimate the impact of the proposed rule on some small businesses

Table 8. Estimated Profitability of a Typical Small Entity by Industry Sector

Typical Profitability	Hydroelectric Power Generation[1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/Natural Gas Distribution[1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Profit margin	7.9	14.8	3.6	7.9	8.3	6.1	9.7	4.5	4.7	8.9	5.7
Small entity sales	200,000,000	6,000,000	6,000,000	750,000	28,500,000	206,712,877	62,963,851	24,560,351	17,000,000	6,000,000	23,748,006
Average profits per small entity	15,800,000	888,000	214,712	59,250	2,361,621	12,698,290	6,117,199	1,108,917	799,000	534,000	1,355,572

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the profits of an average small entity in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 9. Estimated Economic Impacts as a Percentage of the Profitability of a Typical Small Entity by ESU and Industry Sector

ESU	Hydroelectric Power Generation[1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution[1]	Construction Sand and Gravel Mining	Utility Line Construc-tion	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
	Percent of Profits										
California Coastal chinook salmon	0.2	2.2	2.2	6.3	0.0	0.0	0.8	0.5	0.5	0.1	0.0
Central Valley spring-run chinook salmon	1.4	1.1	1.5	4.3	0.0	0.0	0.5	0.8	2.2	0.2	0.0
Central California Coast *O. mykiss*	0.0	2.4	0.4	0.4	0.0	0.0	0.3	0.1	0.6	0.0	0.0
California Central Valley *O. mykiss*	0.7	1.0	2.2	1.2	0.0	0.0	0.3	0.5	1.7	0.1	0.0
Northern California *O. mykiss*	0.1	1.1	2.8	0.0	0.0	0.0	1.3	0.8	0.0	0.1	0.0
South-Central California Coast *O. mykiss*	0.1	3.4	44.0	25.4	0.0	0.1	0.2	0.4	0.4	0.1	0.0
Southern California *O. mykiss*	0.0	2.8	83.2	0.6	0.0	0.3	0.4	0.5	5.9	0.1	0.0
All ESUs[2]	0.4	2.1	4.9	6.3	0.0	0.0	0.4	0.4	1.6	0.1	0.0

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the 7 Pacific salmon and steelhead ESUs. Costs are presented on an annualized basis. These estimates likely provide an upper limit to the compliance costs due to the fact that some of the costs associated with section 7

consultation are expected to be borne directly by or passed onto the Federal government (only the estimated annualized section 7 costs incurred by regulated small entities in the Forestry and Logging and Highway, Street, and Bridge Construction Sectors were adjusted downward to reflect this likelihood).

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs as a percentage of the profitability of a typical small entity in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

[2] Many of the ESUs overlap, thus the row labeled "All ESUs" estimates unique effects and is not simply the sum across all ESUs.

Section 7 consultation costs may impose a disproportionate economic hardship on small entities in certain industry sectors. These costs are unlikely to be directly proportional to the size of the regulated entity. Consequently, it is probable that regulatory costs will represent a higher percentage of profits of small entities than of larger entities. This disproportionality could place small entities in certain industry sectors at a significant competitive disadvantage with larger businesses.

Description of Potential Benefits of the Proposed Rule to Small Entities

Designation of critical habitat may also provide economic benefits to some regulated small entities. However, quantification of potential beneficial effects is not possible at this time due to a lack of data.

VII. Identification of Relevant Federal Rules that may Duplicate, Overlap or Conflict with the Proposed Rule

An IRFA must identify any duplicative, overlapping, and conflicting Federal rules. Rules are duplicative or overlapping if they are based on the same or similar reasons for the regulation, the same or similar regulatory goals, and if they regulate the same classes of industry. Rules are conflicting when they impose two conflicting regulatory requirements on the same classes of industry.

Other rules promulgated under the ESA cover the same subject matter and affect the same classes of small entities. As noted previously, each Federal agency is already required to consult with NOAA Fisheries under section 7 of the ESA to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any Pacific salmon and steelhead ESUs. The proposed rule also overlaps with 4(d) rules that impose "take" prohibitions on activities generally, but do not apply those prohibitions to activities found to be adequately protective of the threatened salmonids or otherwise contributing to conservation of the ESUs. The 4(d) rules do not require any specific actions by non-Federal agencies, businesses, organizations, or private individuals, but they do prohibit any entity from unauthorized "take" of the listed species. In addition, in 1995, the U.S. Supreme Court ruled that the Secretary did not exceed his authority under the ESA when he promulgated a regulation that defines the statute's prohibition on takings to include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns.[9]

Generally, if a consultation is triggered for any listed species, the consultation process will also take into account all other listed species known or thought to occupy areas on or near the project lands. As such, management efforts for other listed species may substantially overlap with those for a particular listed Pacific salmon and steelhead ESU and benefit both species. For example, the presence of bull trout and cutthroat trout provides for the protection of areas that could contribute to the recovery of some Pacific salmon and steelhead ESUs and improve riparian habitat and water quality throughout their proposed designations.

Apart from the ESA, many other Federal regulations and statutes contribute to the conservation and management of the listed Pacific salmon and steelhead ESUs. Regulations and statutes that provide significant protection to the Pacific salmon and steelhead ESUs and their habitat and the Federal entities that administer them are summarized in Table 10. Table 11 lists a number of

[9] *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, No. 94- 859, 1995 U.S. LEXIS 4463, 1995 WL 382088 (S.Ct., June 29, 1995).

additional regulations and statutes that may apply to activities that affect natural resources within the proposed designation; however, they are unlikely to provide significant protection to the listed Pacific salmon and steelhead ESUs.

The combined requirements of these overlapping rules may impose significant costs on some small entities.

Table 10. Federal Regulations and Statutes Other Than the Endangered Species Act That May Provide Significant Protection to Pacific Salmon and Steelhead ESUs and Habitat

Overview of Regulation/Statute	Impact on Land Use Activities Within Listed Pacific Salmon/Steelhead ESU Critical Habitat
Clean Water Act (1987) - The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States. It gives EPA the authority to implement pollution control programs such as setting wastewater standards for industry. The CWA also continued requirements to set water quality standards for all contaminants in surface waters. 33 U.S.C. 1251 et seq.	According to the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit is obtained under its provisions; this requires issuance of Section 404 permits from the USACE. As part of pollution prevention activities, the USACE may limit activities in waterways through its 404 permitting process, independent of salmon concerns. These reductions in pollution may benefit salmon species. Under the National Pollutant Discharge Elimination System program, EPA sets pollutant-specific limits on the point source discharges for major industries and provides permits to individual point sources that apply to these limits. Under the water quality standards program, EPA, in collaboration with States, establishes water quality criteria to regulate ambient concentration of pollutants in surface waters. Under section 401 of the CWA, all applicants for a Federal license or permit to conduct activity that may result in discharge to navigable waters are required to submit a State certification to the licensing or permitting agency.
National Forest Management Act (1976) - This Act requires assessment of forest lands, development of a management program based on multiple-use, sustained-yield principles, and implementation of a resource management plan for each unit of the National Forest System. 16 USC §§ 1600-1614	This Act may provide protection to salmon/steelhead within National Forests, primarily through its authorization of the Northwest Forest Plan (NWFP) and PACFISH (where it continues to apply). NWFP and PACFISH provide numerous protections for salmon species related to Federal lands management activities (see below).
Northwest Forest Plan (1994) - The Northwest Forest Plan defines standards and guidelines for forest use throughout the 24 million acres of Federal lands in its planning area (the range of the Northern spotted owl).	Specifically, the NWFP provides standards and guidelines for management of timber, roads, grazing, recreation, minerals, fire/fuels management, fish and wildlife management, general land management, riparian area management, watershed and habitat restoration, and research activities on USFS and BLM lands. To accomplish its goals, the NWFP defines seven land allocation categories, including "matrix lands," areas where the majority of timber is to be taken, and Riparian Reserves and Key Watersheds, where distances from rivers are set within which many activities are restricted. The Aquatic Conservation Strategy component of the plan specifically provides for fishery habitat, protection, and restoration.

Overview of Regulation/Statute	Impact on Land Use Activities Within Listed Pacific Salmon/Steelhead ESU Critical Habitat
PACFISH (Interim strategies for managing anadromous fish-producing watersheds) (1995) – For anadromous fish-producing watersheds on Federal lands in eastern Oregon, Washington, Idaho and Northern California that are not covered by the NWFP, USFS and BLM adopted a management strategy to arrest the degradation and begin the restoration of anadromous fish protection. This strategy was intended to be in place only for 18-months, beginning in February of 1995, but continues to be implemented.	Like the NWFP, PACFISH provides guidelines for timber, roads, grazing, recreation, minerals, fire/fuels management, lands, riparian area, watershed and habitat restoration, and fisheries and wildlife restoration. Standards and guidelines under PACFISH are nearly identical to those in the NWFP
Federal Power Act (1920, as amended) – The purpose of the FPA was to establish a regulatory agency to regulate non-Federal hydropower generation. The resulting Federal Energy Regulatory Commission (FERC), an independent Federal agency governing approximately 2,500 licenses for non-Federal hydropower facilities, has responsibility for national energy regulatory issues. 16 U.S.C. § 800	This Act may provide protection to salmon from hydropower activities. Section 10(j) of the Federal Power Act (FPA) was promulgated to ensure that FERC considers both power and non-power resources during the licensing process. More specifically, section 18 of the FPA states that FERC shall require the construction, operation, and maintenance by a licensee at its own expense of a fishway if prescribed by the Secretaries of Interior (delegated to the Service) and Commerce (NOAA Fisheries).
Fish and Wildlife Coordination Act (1934, as amended) - This regulation provides that, whenever the waters or channels of a body of water are modified by a department or agency of the U.S., the department or agency first shall consult with the U.S. Fish and Wildlife Service and with the head of the agency exercising administration over the wildlife resources of the State where modification will occur with a view to the conservation of wildlife resources. 16 U.S.C.§§ 661-666	The purpose of this Act is to ensure that fish and wildlife resources are equally considered with other resources during the planning of water resources development projects by authorizing NOAA Fisheries to provide assistance to Federal and State agencies in protecting game species and studying the effects of pollution on wildlife. This Act may offer protection to salmon/steelhead and habitat by requiring consultation concerning the species with NOAA Fisheries for all in-stream activities with a Federal nexus
Rivers and Harbors Act (1938) - The RHA places Federal investigations and improvements of rivers, harbors and other waterways under the jurisdiction of the U.S. Army Corps of Engineers (ACOE) and requires that all investigations and improvements include due regard for wildlife conservation. 33 USC §§ 401 et seq.	This Act may provide protection to salmon/steelhead from in-stream construction activities. Under sections 9 and 10 of the RHA, the ACOE is authorized to regulate the construction of any structure or work within navigable water. This includes, for example, bridges and docks.
National Environmental Policy Act (1969) - NEPA requires that all Federal agencies conduct a detailed environmental impact statement in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment. 42 USC §§ 4321-4345	The NEPA process may provide protection to salmon/steelhead for all activities that have Federal involvement, if alternatives are considered and selected that are less harmful to salmon and its habitat than others.
Roadless Area Protection Act (2002) – RAPA protects specific roadless areas located in National Forests from logging and road building. HR 4865	RAPA may offer protections to salmon/steelhead by minimizing construction and deforestation in National Forests. These protections, if they continue in the future, are likely to reduce the number of roadbuilding projects in these areas.

Overview of Regulation/Statute	Impact on Land Use Activities Within Listed Pacific Salmon/Steelhead ESU Critical Habitat
Wilderness Act (1964) – The Wilderness Act established the National Wilderness Preservation System. With a few exceptions, no commercial enterprise or permanent road is allowed within a wilderness area. Temporary roads, motor vehicles, motorized equipment, landing of aircraft, structures and installations are only allowed for administration of the area. Measures may be taken to control fire, insects and disease. Prospecting for mineral or other resources, if carried on in a manner compatible with the preservation of wilderness, is allowed. 16 USC §§ 1131-1136	The Wilderness Act may offer protections to salmon/steelhead by limiting land disturbing activities in Wilderness Areas in National Forests. Human activity in wilderness areas is likely to be greatly reduced when compared to non-wilderness areas, which is likely to benefit salmon.
The Sikes Act Improvements Act (1997) - SAIA requires military installations to prepare and implement an Integrated Natural Resources Management Plan (INRMP). The purpose of the INRMP is to provide for: the conservation and rehabilitation of natural resources on military installations; the sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping, and nonconsumptive uses; and subject to safety requirements and military security, public access to military installations to facilitate the use of the resources. 16 USC §670	INRMPs developed in accordance with SAIA may provide protection to salmon/steelhead and habitat on military lands.
Long-Term Management Strategy (LTMS) For the Placement of Dredged Material in the San Francisco Bay Region. The LTMS is a multi-agency effort with ACOE, EPA, NOAA Fisheries and others to maintain in an economically and environmentally sound manner those channels necessary for navigation in SF Bay and Estuary and eliminate unnecessary dredging.	The LTMS considered three long-term strategies for channel maintenance, all of which attempt to reduce the amount of sediment disposed within the San Francisco Bay estuary. The LTMS also establishes dredging windows for salmon and other aquatic species. Limitations of sediment and dredging windows to accommodate salmon spawning benefit salmon.

Table 11. Other Federal Regulations and Statutes That may Contribute to the Protection of Pacific Salmon and Steelhead ESUs and Habitat

Fish and Wildlife Conservation Act (1980, as amended) – The FWCA encourages States to develop, revise and implement, in consultation with Federal, State, local and regional agencies, a plan for the conservation of fish and wildlife, particularly species indigenous to the state.

16 USC §§ 2901-2911

Magnuson-Stevens Fishery Conservation and Management Act (1976, as amended) – This regulation requires identification of essential fish habitat in fishery management plans and consideration of actions to ensure the conservation and enhancement of habitat.

16 USC §§ 1801-1882

Fisheries Restoration and Irrigation Mitigation Act (2000) - The FRIMA directs the Secretary of the Interior, in consultation with the heads of other appropriate agencies, to develop and implement projects to mitigate impacts to fisheries resulting from the construction and operation of water diversions by local government entities (including soil and water conservation districts) in the Pacific Ocean drainage area.

16 USC § 777

Water Resources Development Act (1986, as amended) - WRDA authorizes the construction or study of ACOE projects and outlines environmental assessment and mitigation requirements.

33 USC §§ 2201-2330

Anadromous Fish Conservation Act (1965) - The AFCA authorizes the Secretary of the Interior to enter into agreements with States and other non-Federal interests to conserve, develop and enhance the anadromous fish resources of the U.S.

16 USC §§ 757 et seq.

Wild and Scenic Rivers Act (2001) - WSRA authorizes the creation of the National Wilderness Preservation System and prohibits extractive activities on specific lands.

16 USC §§ 1271-1287

North American Wetland Conservation Act (1989) - NAWCA encourages partnerships among public agencies and other interests to protect, enhance, restore and manage an appropriate distribution and diversity of wetland ecosystems and other habitats for migratory birds and other fish and wildlife.

16 USC § 4401 et seq.

Federal Land Policy and Management Act (1976) – This Act requires the Bureau of Land Management to employ a land planning process that is based on multiple use and sustained yield principles

43 USC §§ 1701-1782

Executive Order 11988 and 11990 (1977) – These E.O.'s require, to the extent possible, prevention of long and short term adverse impacts associated with the occupancy and modification of floodplains and prevention of direct or indirect support of floodplain development wherever there is a practicable alternative.

Coastal Zone Management Act (1972) - CZMA establishes an extensive Federal grant program to encourage coastal States to develop and implement coastal zone management programs to provide for protection of natural resources, including wetlands, flood plains, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife and their habitat.

16 USC §§ 1451 et seq.

While the proposed rule may overlap to some extent with the statutes listed above in terms of providing protection to salmon/steelhead and their habitat and may impose a significant financial burden on small entities in certain industry sectors, it will improve protection of the 7 Pacific salmon and steelhead ESUs by ensuring that any actions carried out, funded, or permitted by Federal agencies do not destroy or adversely modify the habitat. Moreover, NOAA Fisheries does not have discretion to decline to designate critical habitat unless it affirmatively finds that it would not be prudent to do so. Agency regulations state designation is not prudent if, "The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species, or . . . such designation of critical habitat would not be beneficial to the species."

NOAA Fisheries is unaware of any Federal rules that conflict with the proposed critical habitat designations of the 7 Pacific salmon and steelhead ESUs.

VIII. Description of Significant Alternatives to the Proposed Rule

An IRFA must consider all significant alternatives that accomplish the stated objectives of the applicable statues and minimize any significant economic impact of the proposed rule on small entities. "Significant alternatives" are those with potentially lesser impacts on small entities (versus large-scale entities) as a whole. The kinds of alternatives that are possible will vary based on the particular regulatory objective and the characteristics of the regulated industry. However, section 603(c) of the RFA gives agencies some alternatives that they must consider at a minimum:

1. Establishment of different compliance or reporting requirements for small entities or timetables that take into account the resources available to small entities.
2. Clarification, consolidation, or simplification of compliance and reporting requirements for small entities.
3. Use of performance rather than design standards.
4. Exemption for certain or all small entities from coverage of the rule, in whole or in part.

NOAA Fisheries considered and rejected the alternative of not designating critical habitat for the 7 Pacific salmon and steelhead ESUs because it did not meet the legal requirements of the Endangered Species Act.

NOAA Fisheries also considered and rejected an alternative in which all the potential critical habitat of the 7 Pacific salmon and steelhead ESUs is proposed for designation. Under this alternative no areas are excluded for economic reasons. Through the section 4(b)(2) process of weighing benefits of exclusion against benefits of designation, NOAA Fisheries determined that the proposed designation of critical habitat provided an appropriate balance of conservation and economic mitigation and that excluding the areas proposed for exclusion would not result in extinction of the species. The proposed critical habitat designation would reduce the adverse economic impacts on entities, including small entities. It is estimated that excluding areas from the proposed rule designating critical habitat could save small entities from zero to $4.3 million in compliance costs depending on the ESU (Table 12). The estimated total savings across all ESUs are $6.4 million.

Table 12. A Comparison of the Proposed Critical Habitat Designation and Critical Habitat Designation with No Areas Excluded by ESU

	Proposed Critical Habitat Designation		Critical Habitat Designation with No Areas Excluded		Difference Between Critical Habitat Designations	
ESU	**No. of Regulated Small Entities**	**Economic Impacts on Small Entities ($)**	**No. of Regulated Small Entities**	**Economic Impacts on Small Entities ($)**	**No. of Regulated Small Entities**	**Economic Impacts on Small Entities ($)**
California Coastal chinook salmon	606	2,683,097	805	3,326,346	199	643,249
Central Valley spring-run chinook salmon	1,117	13,878,615	2,039	18,153,970	922	4,275,355
Central California Coast *O. mykiss*	3,151	5,112,630	5,322	7,651,822	2,171	2,539,192
California Central Valley *O. mykiss*	2,846	18,168,003	3,304	21,616,125	458	3,448,122
Northern California *O. mykiss*	379	1,577,166	381	2,309,142	2	731,976
South-Central California Coast *O. mykiss*	876	5,503,063	876	5,503,048	0	-14
Southern California *O. mykiss*	690	5,424,586	804	7,074,532	114	1,649,946
All ESUs [1]	**7,330**	**36,154,077**	**10,687**	**42,542,584**	**3,357**	**6,388,507**

[1] Many of the ESUs overlap, thus the row labeled "All ESUs" estimates unique effects and is not simply the sum across all ESUs

A third alternative that NOAA Fisheries examined and rejected considered as eligible for exclusion all habitat areas with a low or medium value. The section 4(b)(2) process determined that this alternative furthers the goal of reducing economic impacts; however, for some habitat areas the incremental economic gain from excluding that area is relatively small (Table 13). Moreover, this alternative is not sensitive to the fact that for most ESUs, eliminating all low and medium value habitat areas is likely to significantly impede conservation. Because it is doubtful that the benefits of exclusion outweigh the benefits of specifying these areas as part of the critical habitat, NOAA Fisheries rejected this alternative.

Table 13. A Comparison of the Proposed Critical Habitat Designation and Critical Habitat Designation with Low and Medium Value Areas Excluded by ESU

	Proposed Critical Habitat Designation		Critical Habitat Designation with Low and Medium Value Areas Excluded		Difference Between Critical Habitat Designations	
ESU	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)	No. of Regulated Small Entities	Economic Impacts on Small Entities ($)
California Coastal chinook salmon	606	2,683,097	430	2,303,132	175	379,965
Central Valley spring-run chinook salmon	1,117	13,878,615	1,071	13,107,577	46	771,039
Central California Coast *O. mykiss*	3,151	5,112,630	921	3,391,423	2,230	1,721,207
California Central Valley *O. mykiss*	2,846	18,168,003	2,498	16,816,333	348	1,351,670
Northern California *O. mykiss*	379	1,577,166	310	1,346,733	70	230,434
South-Central California Coast *O. mykiss*	876	5,503,063	393	2,981,865	483	2,521,198
Southern California *O. mykiss*	690	5,424,586	542	4,545,682	148	878,904
All ESUs [1]	**7,330**	**36,154,077**	**4,675**	**29,498,587**	**2,655**	**6,655,490**

[1] Many of the ESUs overlap, thus the row labeled "All ESUs" estimates unique effects and is not simply the sum across all ESUs.

In describing the economic effects of including or excluding a particular area from critical habitat, it is probably not accurate to include all of the co-extensive impacts because it is unlikely that the impacts attributable to critical habitat designation would ever account for the total impacts. However, in examining its extensive consultation record, NOAA Fisheries could not discern a difference in the impact of applying section 7's jeopardy requirement versus applying the adverse modification requirement. For that reason, NOAA Fisheries decided to follow the recommendation of the Tenth Circuit Court of Appeals in a related case and analyze the full impact of the adverse modification requirement, regardless of whether it is coextensive with other requirements, such jeopardy.

Under the ESA, NOAA Fisheries has little discretion, if any, to mandate different compliance methods or schedules for small entities that might "take into account the resources available to small entities" but not comply with the statutory requirements. However, in formulating its biological opinion and any reasonable and prudent alternatives, NOAA Fisheries must use the best scientific and commercial data available and must give appropriate consideration to any beneficial actions taken by the Federal agency or applicant, including any actions taken prior to the initiation of consultation. In addition, NOAA Fisheries must utilize the expertise of the Federal agency and any applicant in identifying reasonable and prudent alternatives. Reasonable and prudent alternatives identified during formal consultation must be economically and technologically feasible.

It is the practice of NOAA Fisheries in a rulemaking to designate critical habitat to also include advice on activities that may destroy or adversely modify critical habitat. By issuing this advice, NOAA Fisheries will explain the proposed rule, provide compliance scenarios to illustrate and clarify any complexities, and provide greater certainty for small businesses' planning purposes.

The ESA requires each Federal agency, in consultation with NOAA Fisheries, to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. Section 7 offers action agencies and applicants, in consultation with NOAA Fisheries, to craft their actions to avoid jeopardizing the continued existence of any listed species or destroy or adversely modify its critical habitat. NOAA Fisheries acknowledges that technical and functional performance criteria are intended to give discretion in

achieving the required end result and provide regulated entities the flexibility to achieve the regulatory objective in a more cost-effective way. To that end, NOAA Fisheries has developed the concept of "proper functioning condition" of salmonid habitat and a "matrix of pathways and indicators" consulting agencies and applicants can use to analyze how their actions will affect proper functioning condition.

Although the proposed rule imposes some costs, it is important to recognize that the designation of critical habitat is mandated by the ESA. NOAA Fisheries considered and rejected the alternative of exempting small entities from coverage of the rule, or any part thereof, because the agency does not have the discretion to provide for exemptions from the requirements of the ESA based on the size of the applicant. However, section 7 of the ESA allows an agency or applicant to apply for an exemption from the requirement to avoid jeopardy or adverse modification of critical habitat.

Appendix A: Estimate of the Number of Small Entities to Which the Proposed Rule will Apply

The purpose of this appendix is to describe how an estimate of the number of regulated small entities in each of the 7 Pacific salmon and steelhead ESUs was derived. For each county included in the analysis, an estimate of the total number of entities within each industry sector subject to the regulation was derived by searching the D&B Duns Market Identifiers (File 516) by NAICS code. Census tract data from the 2000 Census of Population and Housing were used to indirectly estimate the number of businesses in each ESU by assuming that the number of businesses is directly proportional to population density. These percentages were applied to each affected industry to calculate the number of regulated businesses in each sector that are likely to be small.

Table 14. Estimated Number of Regulated Small Entities in California Coastal Chinook Salmon ESU by County

County	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Humboldt	126,518	120,373	95	312	284	296	269
Lake	58,309	89	0	102	94	0	0
Mendocino	86,265	82,557	96	216	198	206	189
Sonoma	458,614	224,758	49	781	705	165	149
Trinity	13,022	485	4	50	48	1	1
Total	**742,728**	**428,262**	**58**	**1,461**	**1,329**	**668**	**608**

Table 15. Estimated Number of Regulated Small Entities in California Coastal Chinook Salmon ESU by County and Industry Sector

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Humboldt	6	14	69	27	23	8	2	13	8	27	72
Lake	0	0	0	0	0	0	0	0	0	0	0
Mendocino	4	13	38	11	16	5	3	16	9	12	61
Sonoma	2	13	2	6	12	3	1	13	11	37	49
Trinity	0	0	0	0	0	0	0	0	0	0	0
Total	**11**	**40**	**109**	**45**	**52**	**15**	**6**	**43**	**27**	**77**	**182**

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 16. Estimated Number of Regulated Small Entities in Central Valley Spring-run Chinook Salmon ESU by County

County	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Alameda	1,443,741	918	0	1,304	1,096	0	0
Butte	203,171	171,090	84	326	293	274	246
Colusa	18,804	8,237	44	49	39	21	17
Contra Costa	948,816	155,331	16	979	866	0	0
Glenn	26,453	7,266	27	82	72	23	20
Nevada	92,033	21,855	24	172	157	41	37
Placer	248,399	164,406	66	430	401	117	109
Sacramento	1,223,499	711,536	58	1,123	988	99	87
San Joaquin	563,598	158,233	28	588	479	0	0
Shasta	163,256	146,480	90	375	344	336	308
Solano	394,542	1,263	0	350	292	1	1
Sutter	78,930	77,776	99	140	119	137	117
Tehama	56,039	55,297	99	100	87	99	86
Yolo	168,660	31,101	18	231	195	43	36
Yuba	60,219	47,849	79	80	72	60	54
Total	**5,690,160**	**1,758,638**	**31**	**6,329**	**5,500**	**1,251**	**1,119**

Table 17. Estimated Number of Regulated Small Entities in Central Valley Spring-run Chinook Salmon ESU by County and Industry Sector

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Alameda	0	0	0	0	0	0	0	0	0	0	0
Butte	7	13	25	15	27	8	1	24	23	42	62
Colusa	1	4	0	2	0	2	0	1	1	0	5
Contra Costa	0	0	0	0	0	0	0	0	0	0	0
Glenn	1	2	0	7	1	1	0	2	2	0	5
Nevada	0	0	4	0	6	0	0	4	4	8	10
Placer	3	6	1	4	17	4	1	10	12	36	17
Sacramento	2	3	1	2	8	2	0	11	5	32	21
San Joaquin	0	0	0	0	0	0	0	0	0	0	0
Shasta	14	23	49	13	38	16	4	39	26	40	45
Solano	0	0	0	0	0	0	0	0	0	0	0
Sutter	7	15	3	7	6	9	1	14	8	16	32
Tehama	2	12	4	21	7	4	2	10	2	10	13
Yolo	1	1	0	2	3	1	0	5	2	9	10
Yuba	1	4	3	8	4	2	0	7	5	4	13
Total	**39**	**85**	**89**	**81**	**116**	**49**	**10**	**129**	**90**	**198**	**233**

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 18. Estimated Number of Regulated Small Entities in Central California Coast *O. mykiss* ESU by County

County	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Alameda	1,443,741	1,229,600	85	1,304	1,096	953	801
Contra Costa	948,816	659,320	69	979	866	63	56
Lake	58,309	4	0	102	94	0	0
Marin	247,289	245,139	99	396	358	264	238
Mendocino	86,265	38,261	44	216	198	96	88
Napa	124,279	121,700	98	219	197	214	193
San Francisco	776,733	429,455	55	879	745	2	1
San Mateo	707,161	637,339	90	685	595	96	84
Santa Clara	1,682,585	1,589,350	94	1,396	1,242	995	885
Santa Cruz	255,602	183,110	72	373	323	267	231
Solano	394,542	159,302	40	350	292	97	81
Sonoma	458,614	452,815	99	781	705	553	499
Total	**7,183,936**	**5,745,395**	**80**	**7,680**	**6,711**	**3,601**	**3,158**

Table 19. Estimated Number of Regulated Small Entities in Central California Coast *O. mykiss* ESU by County and Industry Sector

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Alameda	13	7	4	12	61	19	2	59	33	284	306
Contra Costa	2	1	0	1	6	2	0	8	5	20	11
Lake	0	0	0	0	0	0	0	0	0	0	0
Marin	3	6	1	3	13	7	0	27	11	91	76
Mendocino	2	6	18	5	8	2	1	8	4	6	28
Napa	1	6	0	11	14	2	0	29	23	46	62
San Francisco	0	0	0	0	0	0	0	0	0	1	1
San Mateo	2	3	0	2	7	3	0	6	4	33	25
Santa Clara	11	43	4	12	91	18	1	51	46	354	254
Santa Cruz	3	21	4	5	21	4	0	19	17	56	81
Solano	2	2	0	4	11	3	1	12	7	17	21
Sonoma	6	42	6	21	42	9	4	45	36	124	165
Total	**45**	**138**	**38**	**76**	**274**	**69**	**9**	**265**	**185**	**1,031**	**1,030**

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 20. Estimated Number of Regulated Small Entities in California Central Valley *O. mykiss* ESU by County

County	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Alameda	1,443,741	918	0	1,304	1,096	1	1
Amador	35,100	30,432	87	82	74	0	0
Butte	203,171	190,614	94	326	293	276	248
Calaveras	40,554	10,462	26	89	84	20	19
Colusa	18,804	8,237	44	49	39	21	17
Contra Costa	948,816	155,331	16	979	866	52	46
El Dorado	156,299	21,280	14	246	224	0	0
Fresno	799,407	17,945	2	847	745	19	17
Glenn	26,453	7,266	27	82	72	23	20
Merced	210,554	210,395	100	264	209	264	209
Nevada	92,033	21,855	24	172	157	3	3
Placer	248,399	200,403	81	430	401	344	321
Sacramento	1,223,499	747,119	61	1,123	988	653	575
San Joaquin	563,598	509,765	90	588	479	334	272
Shasta	163,256	151,512	93	375	344	348	319
Solano	394,542	92,622	23	350	292	82	69
Stanislaus	446,997	441,603	99	522	428	516	423
Sutter	78,930	78,930	100	140	119	138	117
Tehama	56,039	55,731	99	100	87	99	87
Yolo	168,660	34,373	20	231	195	47	40
Colusa	40,554	10,462	26	80	72	60	54
Total	**18,804**	**8,237**	**44**	**8,379**	**7,264**	**3,301**	**2,855**

Table 21. Estimated Number of Regulated Small Entities in California Central Valley *O. mykiss* ESU by County and Industry Sector

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Alameda	0	0	0	0	0	0	0	0	0	0	0
Amador	0	0	0	0	0	0	0	0	0	0	0
Butte	7	13	25	15	27	8	1	25	23	42	63
Calaveras	0	3	2	2	2	1	0	2	2	3	2
Colusa	1	4	0	2	0	2	0	1	1	0	5
Contra Costa	1	1	0	0	5	2	0	7	4	17	9
El Dorado	0	0	0	0	0	0	0	0	0	0	0
Fresno	0	1	0	1	1	1	0	2	1	3	5
Glenn	1	2	0	7	1	1	0	2	2	0	5
Merced	4	19	0	53	15	5	1	14	20	29	49
Nevada	0	0	0	0	1	0	0	0	0	1	1
Placer	9	18	2	10	49	10	3	30	35	105	50
Sacramento	12	23	3	15	51	16	3	70	35	211	136
San Joaquin	9	14	1	19	19	11	2	31	18	69	80
Shasta	15	24	51	13	39	17	5	41	27	42	46
Solano	2	1	0	3	10	3	0	10	6	15	18
Stanislaus	15	16	1	47	41	19	5	34	21	98	126
Sutter	7	15	3	7	6	9	1	14	8	16	33
Tehama	2	12	4	21	7	4	2	10	2	10	13
Yolo	1	2	0	2	3	1	0	6	3	10	11
Yuba	1	4	3	8	4	2	0	7	5	4	13
Total	**87**	**172**	**97**	**226**	**281**	**111**	**23**	**306**	**212**	**676**	**665**

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 22. Estimated Number of Regulated Small Entities in Northern California *O. mykiss* ESU by County

County	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Humboldt	126,518	121,092	96	312	284	299	272
Lake	58,309	85	0	102	94	0	0
Mendocino	86,265	45,572	53	216	198	114	104
Sonoma	458,614	2,321	1	781	705	4	4
Humboldt	126,518	121,092	96	50	48	2	1
Total	**742,728**	**169,899**	**23**	**1,461**	**1,329**	**418**	**381**

Table 23. Estimated Number of Regulated Small Entities in Northern California *O. mykiss* ESU by County and Industry Sector

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Humboldt	6	14	70	28	23	8	2	13	8	28	73
Lake	0	0	0	0	0	0	0	0	0	0	0
Mendocino	2	7	21	6	9	3	2	9	5	7	34
Sonoma	0	0	0	0	0	0	0	0	0	1	1
Trinity	0	0	0	0	0	0	0	0	0	0	0
Total	**8**	**22**	**91**	**34**	**32**	**10**	**4**	**23**	**13**	**36**	**108**

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 24. Estimated Number of Regulated Small Entities in South-Central California Coast *O. mykiss* ESU by County

County	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Monterey	401,762	260,828	65	466	397	303	258
San Benito	53,234	52,685	99	97	87	96	86
San Luis Obispo	246,681	224,321	91	456	415	415	378
Santa Clara	1,682,585	91,339	5	1,396	1,242	76	67
Santa Cruz	255,602	72,352	28	373	323	106	91
Total	**2,639,864**	**701,525**	**27**	**2,788**	**2,464**	**995**	**880**

Table 25. Estimated Number of Regulated Small Entities in South-Central California Coast *O. mykiss* ESU by County and Industry Sector

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Monterey	8	27	1	16	18	9	1	18	14	64	82
San Benito	1	9	0	19	9	1	2	8	4	13	21
San Luis Obispo	9	31	2	47	39	12	2	46	20	76	93
Santa Clara	1	3	0	1	7	1	0	4	3	27	19
Santa Cruz	1	8	2	2	8	1	0	8	7	22	32
Total	**20**	**79**	**4**	**85**	**81**	**25**	**5**	**83**	**48**	**203**	**247**

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 26. Estimated Number of Regulated Small Entities in Southern California *O. mykiss* ESU by County

County	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Kern	661,645	14	0	711	633	0	0
Los Angeles	9,519,338	9,480	0	8,481	7,353	10	8
Orange	2,846,289	188,277	7	3,509	3,097	117	103
Riverside	1,545,387	1,281	0	1,574	1,379	90	79
San Diego	2,813,833	410	0	2,787	2,511	32	29
San Luis Obispo	246,681	4,951	2	456	415	0	0
Santa Barbara	399,347	392,160	98	497	418	357	300
Ventura	753,197	187,429	25	806	717	198	176
Total	**18,785,717**	**784,002**	**4**	**18,821**	**16,523**	**803**	**695**

Table 27. Estimated Number of Regulated Small Entities in Southern California *O. mykiss* ESU by County and Industry Sector

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Kern	0	0	0	0	0	0	0	0	0	0	0
Los Angeles	0	0	0	0	0	0	0	1	0	3	3
Orange	5	2	0	0	8	2	0	6	5	43	29
Riverside	2	3	0	2	10	2	0	8	7	24	20
San Diego	1	1	0	0	3	1	0	2	2	12	8
San Luis Obispo	0	0	0	0	0	0	0	0	0	0	0
Santa Barbara	6	22	2	20	0	11	0	29	22	91	97
Ventura	3	15	1	6	20	4	0	24	14	43	45
Total	**18**	**43**	**3**	**29**	**42**	**22**	**1**	**70**	**50**	**215**	**202**

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 28. Estimated Number of Regulated Small Entities in All ESUs by County

County	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Alameda	1,443,741	174,199	12	1,304	1,096	157	132
Butte	203,171	172,258	85	326	293	276	248
Calaveras	40,554	9,019	22	89	84	20	19
Colusa	18,804	8,237	44	49	39	21	17
Contra Costa	948,816	95,153	10	979	866	98	87
Fresno	799,407	17,945	2	847	745	19	17
Glenn	26,453	7,266	27	82	72	23	20
Humboldt	126,518	121,092	96	312	284	299	272
Lake	58,309	89	0	102	94	0	0
Los Angeles	9,519,338	9,480	0	8,481	7,353	8	7
Marin	247,289	164,585	67	396	358	264	238
Mendocino	86,265	83,833	97	216	198	210	192
Merced	210,554	210,395	100	264	209	264	209
Monterey	401,762	260,828	65	466	397	303	258
Napa	124,279	121,700	98	219	197	214	193
Nevada	92,033	21,855	24	172	157	41	37
Orange	2,846,289	188,277	7	3,509	3,097	232	205
Placer	248,399	198,876	80	430	401	344	321
Riverside	1,545,387	1,281	0	1,574	1,379	1	1
Sacramento	1,223,499	711,536	58	1,123	988	653	575
San Benito	53,234	52,685	99	97	87	96	86
San Diego	2,813,833	410	0	2,787	2,511	0	0
San Francisco	776,733	1,453	0	879	745	2	1
San Joaquin	563,598	320,089	57	588	479	334	272
San Luis Obispo	246,681	228,986	93	456	415	423	385
San Mateo	707,161	99,609	14	685	595	96	84
Santa Barbara	399,347	390,072	98	497	418	485	408
Santa Clara	1,682,585	1,290,823	77	1,396	1,242	1,071	953
Santa Cruz	255,602	255,462	100	373	323	373	323
Shasta	163,256	151,512	93	375	344	348	319
Solano	394,542	110,603	28	350	292	98	82
Sonoma	458,614	326,992	71	781	705	557	503
Stanislaus	446,997	441,603	99	522	428	516	423
Sutter	78,930	77,776	99	140	119	138	117
Tehama	56,039	55,731	99	100	87	99	87
Trinity	13,022	485	4	50	48	2	2
Ventura	753,197	179,373	24	806	717	192	171
Yolo	168,660	34,373	20	231	195	47	40
Yuba	60,219	45,157	75	80	72	60	54
Total	**30,303,117**	**6,641,098**	**22**	**32,133**	**28,129**	**8,386**	**7,358**

Table 29. Estimated Number of Regulated Small Entities in All ESUs by County and Industry Sector

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Alameda	2	1	1	2	10	3	0	10	5	47	51
Butte	7	13	25	15	27	8	1	25	23	42	63
Calaveras	0	3	2	2	2	1	0	2	2	3	2
Colusa	1	4	0	2	0	2	0	1	1	0	5
Contra Costa	2	2	0	1	9	4	0	13	7	32	17
Fresno	0	1	0	1	1	1	0	2	1	3	5
Glenn	1	2	0	7	1	1	0	2	2	0	5
Humboldt	6	14	70	28	23	8	2	13	8	28	73
Lake	0	0	0	0	0	0	0	0	0	0	0
Los Angeles	0	0	0	0	0	0	0	0	0	3	3
Marin	3	6	1	3	13	7	0	27	11	91	76
Mendocino	4	14	39	12	17	5	3	17	9	13	62
Merced	4	19	0	53	15	5	1	14	20	29	49
Monterey	8	27	1	16	18	9	1	18	14	64	82
Napa	1	6	0	11	14	2	0	29	23	46	62
Nevada	0	0	4	0	6	0	0	4	4	8	10
Orange	11	4	1	1	17	5	0	13	11	85	58
Placer	9	18	2	10	49	10	3	30	35	105	50
Riverside	0	0	0	0	0	0	0	0	0	0	0
Sacramento	12	23	3	15	51	16	3	70	35	211	136
San Benito	1	9	0	19	9	1	2	8	4	13	21
San Diego	0	0	0	0	0	0	0	0	0	0	0
San Francisco	0	0	0	0	0	0	0	0	0	1	1
San Joaquin	9	14	1	19	19	11	2	31	18	69	80
San Luis Obispo	9	32	2	48	40	12	2	47	20	78	95
San Mateo	2	3	0	2	7	3	0	6	4	33	25
Santa Barbara	9	30	3	27	0	16	0	39	29	123	132

County	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Instream Activites	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Santa Clara	12	46	5	13	98	19	1	55	49	381	274
Santa Cruz	4	30	6	7	29	5	0	27	24	78	113
Shasta	15	24	51	13	39	17	5	41	27	42	46
Solano	3	2	0	4	11	3	1	12	7	17	21
Sonoma	6	43	6	21	42	9	4	45	36	125	166
Stanislaus	15	16	1	47	41	19	5	34	21	98	126
Sutter	7	15	3	7	6	9	1	14	8	16	33
Tehama	2	12	4	21	7	4	2	10	2	10	13
Trinity	0	0	1	0	0	0	0	0	0	0	0
Ventura	3	15	1	6	20	4	0	23	14	42	44
Yolo	1	2	0	2	3	1	0	6	3	10	11
Yuba	1	4	3	8	4	2	0	7	5	4	13
Total	**169**	**453**	**235**	**443**	**650**	**221**	**39**	**696**	**481**	**1,950**	**2,021**

[1] All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Appendix B: Estimate of the Economic Impacts on Small Entities by ESU

The purpose of this appendix is to describe how estimates of the compliance costs for small entities in each of the 7 Pacific salmon and steelhead ESUs were derived. Estimates of the costs per project for each industry sector were based on a review of the historical consultation record (Table 30). The costs were annualized over a 5- to 30-year time horizon, depending on the expected life of the project. It is likely that businesses that do not meet SBA's small business size standards will have larger projects and, therefore, greater costs per project. However, in order to present a conservative (i.e., high end) estimate of per-project costs, this analysis assumes that these costs are as high for small businesses as they are for larger ones.

An estimate of the number of projects that would be affected by section 7 consultation was only available for all businesses, both large and small. It is likely that businesses that do not meet SBA's small business size standards will have a greater number of affected projects per entity. However, due to a lack of information regarding the number of affected projects involving small entities, this analysis conservatively assumes that the ratio of small entity projects to all projects is equal to the ratio of small entities to all entities.

Based on the predicted annual project modification costs and number of projects by small entities that would be affected, an estimate of the annual economic impacts on small entities in each ESU was calculated. Both overall compliance costs and per-entity compliance costs are presented. The cost estimates in the tables represent all costs attributable to Pacific salmon and steelhead section 7 consultations, including both those attributable to the listing of the ESUs as well as those attributable to critical habitat designation.

Table 30. Estimates of Expected Costs of Section 7 Impacts to a Project by Industry Sector

Activity	Subactivity	Cost Category	Range	Average Cost	Unit	Time Frame (T Years)	Discount Rate	Present Value (T years)	Annualized	Annualized Activity Score	Notes
Utility Lines	Outfall Structures and Pipelines	Low	$100,000	$101,000	per project	8	7%	$75,388	$12,625	13	see footnote 1
		High	$102,000								
Instream Activities	Dredging	Low	$332,000	$821,000	per project	8	7%	$612,805	$102,625	103	see footnote 1
		High	$1,310,000								
	Dredging - SF Bay	Low	$162,000	$651,000	per project	8	7%	$485,914	$81,375	81	see footnote 1b
		High	$1,140,000								
	Boat Dock, Boat Ramps, Bank Stabilization	Low	$25,000	$54,500	per project	8	7%	$40,679	$6,813	7	see footnote 1
		High	$84,000								
Residential and Commercial Development	New Development	Low	$230,000	$235,000	per project	20	7%	$124,480	$11,750	1	Score is adjusted for probability of occurrence. see footnote 2 and 3
		High	$240,000								
EPA Water Quality Temperature Compliance	Temperature Compliance	Low-Min O&M only	$0	$136,000	per facility	20	7%	$72,039	$6,800	7	see footnotes 3 and 4
		High-Min O&M only	$272,000								
		Maj- ave. O&M	$394,500	$816,000	per facility	20	7%	$630,467	$59,512	60	
		Maj-capital cost	$421,500								
Sand and Gravel Mining	Mining on Non-Federal Lands	Low	$0	$800,000	per project	30	7%	$330,908	$26,667	27	
		High	$1,600,000								
Livestock Grazing on Federal Land	Grazing	Low	$11	$ 29.00	per acre	10	7%	$20.368	$3	0.0029	See footnote 6. Per acre range $11 - $47
		High	$ 47								
Transportation	Roads	Small	$22,800		per mile	5	7%	varies	see worksheet "Trans"	see worksheet "Trans"	see footnote 5
		Medium	$47,000								
		Large	$71,300								
	Bridges & Culverts	Small	$27,800								
		Medium	$55,500								
		Large	$84,300								
Federal Land Management Activities	Federal Land Activities	Idaho (ID) Low	$ 0.68								

Activity	Subactivity	Cost Category	Range	Average Cost	Unit	Time Frame (T Years)	Discount Rate	Present Value (T years)	Annualized	Annualized Activity Score	Notes
		Idaho (ID) High	$ 1.84	$ -				$0.00	$0.00	$ -	
		Western OR/WA (WOW) Low	$ 3.08								
		Western OR/WA (WOW) High	$ 8.71	$ -				$0.00	$0.00	$ -	scores are presented per 1,000 acres
		Eastern OR/WA (EOW) Low	$ 1.62		per acre	10	7%				
		Eastern OR/WA (EOW) High	$ 4.98	$ -				$0.00	$0.00	$ -	
		No. Calif (NC) Low	$ 4.91								
		No. Calif (NC) High	$ 12.98	$ 8.95				$62.83	$8.95	$ 8.95	
		So. Calif (SC) Low	$ 6.04								
		So. Calif (SC) High	$ 18.27	$ 12.16				$85.37	$12.16	$ 12.16	
Nonhydro Dams and Water Supply	Dams	Low	$24,000	$2,120,500	per dam	20	7%	$1,123,230		106	See also worksheet "NONHY_SCORE"
		High	$ 4,217,000						$106,025		
	Dams with no impacts	No Score	$0	-	per dam	-	-	$0			
Hydropower Projects	Hydropower projects	Low	$162,000	varies	per dam	10	7%	varies		see worksheet "HY_SCORE"	
		High	$595,000,000								
	Hydropower projects with no impacts	No Score	$0	-	per dam	-	-	$0			
Agriculture-Pesticide Buffer Zones	Orchards	Low	0.00	$322.59	per acre	1	-	-		see worksheet "AG_LANDS"	See footnote 7 and worksheet "AG_LANDS"
		High	$645.18								
	Row Crops	Low	$0.00	$481.32							
		High	$962.64								
	Small Grains	Low	$0.00	$24.19							
		High	$48.38								

FOOTNOTES:

1. For activities that rely on USACE permit data (Utilities, Instream Activities (including dredging), we adjust for temporal differences in the data by adjusting the GIS spatial volume count. We inflate the historic volume count to an 8 year period, then divide by 8 to get an annual number of projects. We assume the distribution of those projects over the 8 year period is constant.

USACE District	Time period of data	Total years of data	Adjustment factor
LA	2002 - 2003	1	8.00
Portland	20000-02	3	2.67
Seattle	20000-03	4	2.00
Walla Walla	1998-2003	5	1.60
San Fran	1996-2003	7	1.14
Sacramento	1995-2003	8	1.00

1b. For Dredging projects within the San Francisco Bay, we apply a unique cost. In addition to adjusting by 1.14 to reflect years of available data, we also adjust by 0.14 to reflect the likelihood of the project modification actually occurring (14 % of the time) for these unique dredging projects (which occurs 14 percent of the time)

2. The Activity Score for development is adjusted to reflect the probability that a project will bear costs associated with section 7 implementation for salmon. We assume a probability of 5.9 percent with a resulting development score of 0.7.

3.The GIS spatial volume count for NPDES permit data is adjusted for temporal differences in the data as shown below:

State	Years of Data	Adjustment Factor
CA	3	1.33
WA	3	1.33
OR	4	1.00
ID	0.75	5.33

4. For NPDES permitting, we assume that 25 percent of major facilities and 20 percent of minor facilities will be impacted by the temperature criteria. Our GIS spatial volume count is adjusted to reflect this ratio.

The ratio is based on an EPA study of temperature criteria compliance where 1 of 4 majors incurred significant costs (e.g., capital costs) and 1 of 5 minors incurred significant operation and maintenance costs.

5. Road project activity scores were developed on a per mile basis and evaluated on a case by case basis. See worksheet "TRANS"

6. Grazing area conversions: 1 square meter equals 0.0002471 acres. (GIS data of Federal land area is stored in square meter format)

7. For Agriculture-Pesticide Buffer zone estimates, costs are net cash farm income per acre of cropland. Definitions: Net cash farm income of the operator. This value is the operator's total revenue (fees for producing under contract, total sales not under contact, government payments, and farm-related income) minus total expenses paid by the operator. Net cash farm income of the operator removes the value of contract commodities produced and acknowledges the income the operator(s) received for services performed by the contractor. Net cash farm income of the operator is a new concept for the 2002 census.

Total cropland. This category includes cropland harvested; cropland used only for pasture or grazing; cropland idle or used for cover crops or soil improvement but not harvested and not pastured; cropland on which all crops failed; and cropland in cultivated summer fallow.

Source: NASS, 2002.

Table 31. Estimated Annual Economic Impacts on Small Entities in California Coastal Chinook Salmon ESU by Industry Sector

	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Project Costs, All Entities ($)	320,388	826,995	5,185,583	170,100	124,620	0	320,000	277,133	116,993	34,932	209,815
No. of Small Entities	11	40	109	45	52	13	6	43	27	77	182
Small Entities as Percent of Total	100%	97%	98%	100%	94%	100%	93%	95%	91%	96%	80%
Project Costs, Small Entities	320,388	803,818	507,772	169,309	11,673	0	297,348	263,528	106,962	33,686	168,612
Costs per Small Entity ($)	28,076	19,849	4,641	3,754	227	0	50,924	6,148	3,957	438	925

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

[1] All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represents an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 32. Estimated Annual Economic Impacts on Small Entities in Central Valley Spring-run Chinook Salmon by Industry Sector

	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Project Costs, All Entities ($)	8,879,125	890,610	3,131,667	212,320	375,778	63,125	320,000	1,342,063	1,595,875	198,561	332,770
No. of Small Entities	39	85	89	81	116	47	10	129	90	198	233
Small Entities as Percent of Total	100%	97%	94%	97%	96%	92%	91%	94%	98%	94%	73%
Project Costs, Small Entities	8,879,125	863,770	294,314	205,491	36,102	58,045	292,439	1,264,438	1,557,019	186,142	241,730
Costs per Small Entity ($)	226,718	10,169	3,290	2,541	310	1,246	29,811	9,812	17,275	942	1,038

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

[1] All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represents an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 33. Estimated Annual Economic Impacts on Small Entities in Central California Coast *O. mykiss* ESU by Industry Sector

	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Project Costs, All Entities ($)	10,603	3,223,160	367,496	17,133	333,502	0	266,667	421,285	1,047,735	236,251	405,881
No. of Small Entities	45	138	38	76	274	61	9	265	185	1,031	1,030
Small Entities as Percent of Total	100%	93%	94%	94%	94%	92%	66%	88%	89%	96%	78%
Project Costs, Small Entities	10,603	3,001,037	34,393	16,155	31,304	0	177,136	369,741	928,901	226,711	316,650
Costs per Small Entity ($)	235	21,716	915	214	114	0	20,770	1,396	5,027	220	307

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

[1] All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represents an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 34. Estimated Annual Economic Impacts on Small Entities in California Central Valley *O. mykiss* ESU by Industry Sector

	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Project Costs, All Entities ($)	9,456,443	1,653,990	4,853,049	172,176	838,709	75,750	506,667	2,282,188	3,032,625	553,397	544,244
No. of Small Entities	87	172	97	226	281	101	23	306	212	676	665
Small Entities as Percent of Total	100%	94%	94%	96%	95%	94%	90%	93%	96%	94%	68%
Project Costs, Small Entities	9,456,443	1,559,234	457,638	165,118	79,812	71,071	453,484	2,119,010	2,917,974	520,404	367,816
Costs per Small Entity ($)	108,750	9,066	4,731	729	284	702	19,829	6,922	13,771	770	553

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

[1] All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represents an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 35. Estimated Annual Economic Impacts on Small Entities in Northern California *O. mykiss* ESU by Industry Sector

	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Project Costs, All Entities ($)	138,824	233,255	5,586,587	88	24,777	0	293,333	246,068	0	11,031	154,301
No. of Small Entities	8	22	91	34	32	8	4	23	13	36	108
Small Entities as Percent of Total	100%	98%	98%	100%	93%	100%	99%	96%	89%	97%	79%
Project Costs, Small Entities	138,824	227,829	549,677	88	2,303	0	290,023	235,840	0	10,729	121,854
Costs per Small Entity ($)	17,580	10,197	6,011	3	71	0	81,670	10,358	0	301	1,130

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

[1] All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represents an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 36. Estimated Annual Economic Impacts on Small Entities in South-Central California Coast *O. mykiss* ESU by Industry Sector

	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Project Costs, All Entities ($)	181,565	2,459,780	4,515,797	1,383,719	160,036	303,000	133,333	513,799	162,750	90,088	180,426
No. of Small Entities	20	79	4	85	81	21	5	83	48	203	247
Small Entities as Percent of Total	100%	98%	94%	93%	95%	91%	48%	92%	95%	94%	78%
Project Costs, Small Entities	181,565	2,403,306	424,814	1,283,542	15,180	277,001	63,985	473,346	154,991	84,888	140,443
Costs per Small Entity ($)	9,159	30,478	94,557	15,058	187	13,485	12,421	5,676	3,238	419	569

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

[1] All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represents an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 37. Estimated Annual Economic Impacts on Small Entities in Southern California *O. mykiss* ESU by Industry Sector

	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Project Costs, All Entities ($)	0	1,155,673	7,501,207	12,431	112,020	707,000	53,333	490,500	2,463,000	142,486	167,737
No. of Small Entities	18	43	3	29	42	16	1	70	50	215	202
Small Entities as Percent of Total	100%	92%	83%	85%	58%	84%	55%	92%	96%	96%	81%
Project Costs, Small Entities	0	1,067,319	621,807	10,597	6,547	596,002	29,212	449,608	2,370,734	136,249	136,511
Costs per Small Entity ($)	0	24,756	178,640	369	157	36,140	23,166	6,458	47,071	632	674

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

[1] All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represents an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 38. Estimated Annual Economic Impacts on Small Entities in All ESUs by Industry Sector

	Hydroelectric Power Generation [1]	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution [1]	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities
Project Costs, All Entities ($)	9,968,999	8,959,113	25,983,146	1,758,023	1,469,043	1,085,750	1,253,333	3,708,589	6,380,610	1,036,931	1,394,586
No. of Small Entities	169	453	235	443	650	193	39	696	481	1,950	2,021
Small Entities as Percent of Total	100%	95%	95%	94%	90%	93%	75%	92%	94%	95%	75%
Project Costs, Small Entities	9,968,999	8,502,889	2,480,214	1,659,884	132,150	1,008,705	936,990	3,403,888	6,026,301	985,336	1,048,721
Costs per Small Entity ($)	58,900	18,757	10,565	3,745	203	5,231	24,170	4,893	12,521	505	519

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

[1] All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represents an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as "small" if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Appendix C: Estimates of the Profits of Small Entities by Industry Sector

The purpose of this appendix is to describe how the analysis estimated the profitability of small businesses to which the proposed rule will apply.

Standardized industry information was used to estimate profit margins for businesses in each sector. The two sources for business profitability information were Risk Management Association's (RMA's) *Annual Statement Studies* and IMPLAN, an economic input-output software packaged developed by MIG, Inc.

The *Annual Statement Studies* published by RMA provides an annual set of financial ratio benchmarks for a diverse group of industries. The financial data is standardized across the entire U.S. and is grouped by either sales or asset ranges. This analysis used the sales range figures, as the SBA size standards for most of the industry sectors to which the proposed rule will apply are based on average annual receipts. RMA's profit margins served as an estimate of the average business' annual profitability for each sector.

Technical coefficients provided in IMPLAN were used to estimate the profitability of firms in those sectors for which information was not available from the *Annual Statement Studies.* IMPLAN's technical coefficients are based on national production function data developed by the U.S. Bureau of Economic Analysis in 1997. IMPLAN data provides, among other measures of economic activity, industry output, number of employees, and proprietors' income. In this analysis proprietors' income was divided by the total industry output to estimate profit margins for businesses in each industry sector. The total output and number of employees was also used in developing sales estimates for small businesses in sectors where size was defined based on the number of employees.

Economic information compiled for 18 industry sectors was consolidated to match the 12 industry groupings identified for this analysis. Profit margins were calculated as simple averages. Sales levels were calculated as weighted averages based on sales for each sub-industry and the number of business identified in each sector based on California data from the 1997 U.S. Census Bureau, Economic Census.